EDITED BY OSKAR LANGE

PROBLEMS OF POLITICAL ECONOMY OF SOCIALISM

SECOND EDITION

RECKONED in terms of its use and relevance in the modern world, the literature of the political economy of socialism is surprisingly meagre. Perhaps the first important attempt at a theoretical generalisation of the experience of building socialism came from Stalin and, later, in a textbook of political economy published by the Soviet Academy of Sciences. Occasional writings on the subject have no doubt appeared in the Soviet Union, Poland, China and Yugoslavia.

This volume, however, can claim to be the first serious and systematic study of the subject by a group of well known Polish economists, headed by the late Prof. Oskar Lange. The first Polish edition which appeared in 1958 sold out within weeks; the second edition, vastly revised, followed in 1959, and the first English edition appeared in 1963. This second Indian edition surely is testimony to the wide interest that the book has evoked in India, too, as in other English-speaking countries.

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PROBLEMS OF POLITICAL ECONOMY OF SOCIALISM

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I

POLITICAL ECONOMY OF SOCIALISM *

Oskar Lange

THE FOUNDERS OF SCIENTIFIC SOCIALISM, Marx and Engels, devoted all their efforts to the analysis of the capitalist economy. They made only a few highly generalised remarks about the socialist economy. As a matter of principle, they refused to enter into the problem in greater detail, out of fear of proving more utopian than scientific. The great socialist movement of the nineteenth and the beginning of the twentieth century also devoted all its scientific efforts to the analysis of capitalism, although Bebel and Kautsky made some attempt to utilise the perspective of a socialist society.

The situation changed after the First World War. Under the impact of the October Revolution, the question of socialist construction became a practical problem. The revolutions in Central Europe, in Germany and Austria, brought forward the question of the transition from capitalism to socialism. In this period, therefore, there is some literature which deals with the economic problems of socialism. In the Soviet Union, Lenin, first of all, took up the problems of a socialist economy, which were also considered in the writings of Bukharin, Preobrazhensky, Strumilin and others. The social democratic movement at the same time produced the writings of Otto Bauer, Kautsky and others, which dealt in a tentative way with the problems of a socialist economy. During this period there also emerged a considerable non-Marxist literature which sought to show the impossibility of establishing a proper economic accounting under socialism. Max Weber, von Mises, Hayek and others presented arguments which the socialist side sought to answer. I myself wrote on this subject, and in England there were Abba Lerner, H. D. Dickinson and Maurice Dobb.

* An address delivered on 18 November 1957 at the Institute for International Politics and Economics, Belgrade.

In the meantime in the Soviet Union, socialism became a viable, functioning system. Though it provided new experiences, for the time being they called forth only a few theoretical generalisations, such as the writings of Ostrovitianov. The first important attempt at theoretical generalisation from the experiences of the Soviet economy was given in the famous booklet by Stalin on *Economic Problems of Socialism in the USSR*, and then in the textbook of political economy, recently published by the Soviet Academy of Sciences. In the meantime other socialist experiences were accumulating, first in Yugoslavia, later in China, Poland and the other people's democracies. One can conclude that the time is slowly maturing for a synthetical, theoretical account of the principles of socialist economy.

Of course such a synthesis can be only preliminary and provisional. What I am going to say here, therefore, represents only my personal view. Among Polish economists, despite an active discussion, there are many divergent views, as would be inevitable considering the fact that the problem is still in its infancy. What I am going to present, as a consequence, are my views of the moment, which may later be modified both as a result of further study on my own part and further practical developments in the living experience of a socialist economy.

The basis of the scientific treatment of the political economy of socialism is the assumption that there exist in a socialist society objective economic laws. I shall start my exposition with the statement that socialist society is subject, first, to the general laws of social development which are formulated in the theory of historical materialism, and, secondly, to special economic laws.

Concerning the operation of general laws of social development, it has sometimes been denied that socialist society is subject to the laws of historical materialism. For instance, in Poland the great Marxist sociologist, Krzywicki, maintained that these laws are not applicable to a socialist society. Besides such a formal, explicit denial, there has frequently been an implicit denial. This was done by denying that the development of socialist society takes place through the operation of contradictions. It was thought that all social contradictions, all contradictions in human life, automatically disappear in a socialist society

This view is quite incompatible with Marxist theory. It expresses a Christian-eschatological and not a Marxist-scientific attitude.

Socialism is not the realisation of the religious ideal of the Kingdom of God, but a new stage in the development of human society, a stage which can and must be studied with the methods of Marxist analysis. It has been the merit of Mao Tse-tung to have recalled with emphasis the fact that socialist soceity, too, develops through contradictions.

The basic contradictions which are the moving force of social development are, according to the theory of historical materialism, two: first, the contradiction between the development of the productive forces and the restrictive character of the relations of production; and second, the contradiction between mode of production (or what is called the economic base of society) and the superstructure of organisation and management of the economy, of political organisation, of moral and psychological attitudes, of conservatism of habits and so on. These basic contradictions also arise in the course of the development of a socialist society. The essential difference, however, between a socialist society and one based on class domination is this: that in societies based on class domination these contradictions — particularly the contradiction between the development of the productive forces and the restrictive character of the relations of production — are connected with class interest and take the form of class struggle. This does not happen in a socialist society. Therefore, we usually speak of these contradictions under socialism as being non-antagonistic in character.

But this does not mean that social conflicts cannot develop in societies. for, in addition to social classes, there exist social strata. The difference between social classes and social strata is that, whereas social classes are based on the relations of production, social strata have their economic base in the particular form of the superstructure of the society. To give an example: in a capitalist society capitalists are a class, but bankers, merchants, lawyers, priests, government officials form social strata. These latter have their economic base in the organisation of the superstructure, not in the relations of production. In terms of the source of the income which they receive, 'classes' receive income through the process of the primary distribution of income, such as wages and surplus value, while 'social strata' derive their income from a secondary distribution. For instance, government officials get their income from taxes, priests from donations, merchants and bankers from a part of the surplus value which is used to remunerate their non-

productive (but, in the capitalist framework, necessary) activities.

In all societies, therefore, there are social strata. It follows that the contradictions which may arise in the development of a socialist society between the requirements of the economic base and antiquated superstructures (such as methods of management of the national economy, political superstructures and so on) may also provoke an opposition of the vested interests of certain strata which makes a change difficult. But these are not social classes; there are no class struggles. The overcoming of these obstacles does not require a basic change in the relations of production, that is a social revolution, though it may lead to all sorts of friction in the superstructure during the period of the transformation and adaptation of superstructure to the new requirements of the economic base.

That much can be said about the operations of the laws of historical materialism in a socialist society. I do not wish to dwell on the further perspective of what happens to the social strata in the transition to communism. Nothing could be said at present regarding this stage without abandoning scientific method, since the relevant empirical facts are not yet in existence.

The second problem concerns the operation of economic laws in a socialist society. Some Marxist economists have held the view that no economic laws operate in a socialist society, and that political economy loses its role as a science with the end of capitalism. The most prominent exponent of this view was Rosa Luxemburg who actually coined the famous phrase that the proletarian revolution is the last act of political economy as a science. Others who took the same view, particularly in the early years of the Soviet Union, were probably under the influence of Rosa Luxemburg. Bukharin and his school took essentially the same view, that political economy is a science of capitalism and ends when the capitalist system ends. Not only does this theory contradict the views of Marx, Engels and Lenin; more importantly, the experience of existing socialist economies has shown that economic laws do operate within them.

At a certain period in the Soviet Union, though the view was not always very clearly and openly put, there was a tendency which later was called by Soviet economists 'voluntarism.' 'Voluntarism' denied that economic laws operated under socialism and put forward the assumption that in a socialist state the con-

trollers of economic policy can do whatever they wish. The very fact that Stalin in his last book on *Economic Problems of Socialism in the USSR*, strongly insisted upon the continued existence of objective economic laws is impressive testimony that such laws exist and cannot be neglected.

The essential difference in the operation of economic laws in a socialist society is that they do not operate there in an elemental way. Organised society shapes in a conscious, purposive way the circumstances which determine their operation. Economic laws can thus be made to operate in accordance with human will, just as man through modern technology utilises the laws of nature and makes them operate in conformity with his will. Such was the famous idea expressed by Engels, when he spoke of the ability of society to control consciously the laws of its own operation, and called this 'the leap from the kingdom of necessity to the kingdom of freedom.'

With reference to the economic laws operating in a socialist society, I think we can distinguish four types of such laws, according to their relationship to the socialist mode of production.

First there are laws which are general in the sense that they operate in every socio-economic system. These are the laws of production and reproduction. They are the laws which concern the general features of the organisation of the labour process, the cooperation and division of labour, the role of indirect labour crystallized in the means of production and direct (live) labour in the process of production. Then there are also the laws of reproduction which concern the replacement of the means of production used up in the process of production, and the laws governing the division of the product between consumption and accumulation, and the laws of balance in the process of reproduction in the various branches of economic activity. All such laws apply to any mode of production, whether socialist, capitalist, feudal or any other. In any society these laws establish certain technical balances between material objects. They show, for instance, that one cannot accumulate if one consumes the whole net product, that one cannot maintain reproduction if one does not replace the means of production used up, that, if one wants to produce a certain amount of steel, one needs to have a certain amount of coal for that purpose. Such balances between material objects must be provided in any economy,

whatever the social system, since they refer to the operation of productive processes.

The second type includes the laws which are specific to the socialist mode of production, in other words, such laws as are determined by the socialist relations of production. The relation of production determine the incentives which govern human economic activity since the ownership of the means of production determines for what purposes the means of production will be used. For instance, ownership under capitalism exists for the profit of these owners; under socialism ownership exists for the satisfaction of the wants of society. I believe that the terminology used by Stalin in his book, when he spoke of a fundamental law which underlies every economic system, is rather helpful. But the thought is really to be found in Marx. It says: when we study a social system, we have to discover the economic law which organises the whole system, and this law will be found to depend on the existing relations of production. Under capitalism it determines that production be for private profit; under socialism it determines that production be for the satisfaction of human wants. Thus there exists, first of all, this 'fundamental law' of each mode of production which determines the purpose of the use of the means of production.

In addition to the purpose for which the means of production are used and for which the whole production process is organised, the relations of production also determine the mode of social interaction of human activities: for instance, whether the interaction of human activities takes the form of competition, or monopoly, or of planned direction. This is also a result of the mode of production, and here the socialist relations of production do produce certain specific economic laws.

Thus socialist relations of production which consist of the social ownership of the means of production have two consequences. One is that production and all economic activity is carried on for the satisfaction of the needs of society. The other is that the basic mode of social interaction in economic activity is planning, by which I mean a conscious guidance of economic processes by an organised society. I do not enter here into the methods of planning, whether centralised or decentralised and so on, but the very fact that the means of production are social property carries the consequence that the whole productive economic process is consciously

and purposively guided by a socialist society, and in this sense is planned. This is the reason why the economic laws in such a society are not elemental, but their operation is consciously directed by the social welfare.

Besides these general economic laws which operate in any social system, and laws specific to a particular mode of production, there are also laws of an intermediate nature. These are not general, but specific to more than one mode of production. They operate in several modes of production and express certain common features of these modes of production. Such are the economic laws which are the result of commodity production, such as the law of value; and as commodity production in practice implies exchange for money, there should also be mentioned the elementary laws of monetary circulation. In pure theory we may distinguish between the process of exchange of commodities and monetary circulation, but in practice the two are always connected. Developed commodity production is production where exchange takes place with the aid of money. Thus I would add here the elementary laws of monetary circulation.

Commodity production is carried on — and consequently the laws of value and monetary circulation operate — already in pre-capitalist societies, though in a restricted field. Under capitalism all production takes the form of commodity production and is subject to the laws of value and the laws of monetary circulation. In a socialist economy the law of value continues to operate because production continues to be commodity production. The reasons why production in a socialist economy is commodity production (and consequently subject to the law of value) is the existence of a multiplicity of owners of products in a socialist society. This multiplicity of owners results from two of the features of a socialist society. First, the existence of various forms of social ownership of the means of production has the consequence that there is not just one owner of the means of production; there are many. Secondly, the method of distribution of the product in a socialist society passes the products produced in a socialist production process directly into the private ownership of the consumers.

The reason why there are various forms of social ownership of means of production is historical. In the existing socialist countries, as we know, means of production may be owned socially, either as the property of the whole nation or that of cooperatives, of

municipalities, of various societies and institutions (for instance, trade unions). Thus it is clear that there are various types of property under socialist ownership. These various types result from the historical conditions under which the transition from capitalism to socialism has taken place. There are differences in various countries. In the nineteenth century and at the beginning of the twentieth, many Socialists thought that there would be only one form of socialist ownership (namely, the national ownership) which in the long run (when national socialist states had merged into one world socialist federation) would merge into an international socialist ownership. It was also thought that the transition from capitalism to socialism would take place solely through the expropriation of the capitalist class (which by the way would then possess a high concentration of capital) so that the social revolution would be a rather simple and easy act.

Historical experience has shown that the crisis of the capitalist system took place earlier than expected; namely, before capitalism has had the possibility of destroying non-capitalist forms of production, particularly small commodity production. Owing to the rise of imperialism, the breakdown of capitalism has occurred first in the less developed countries. Socialism starts to develop first in those countries which imperialism has prevented from developing along traditional capitalist lines. Thus in addition to the expropriation of the capitalist class (which leads to one type of socialist ownership, national ownership) it is necessary to organise socialist ownership on the basis of small commodity production; hence the great significance of the cooperative form of socialist ownership.

In some countries the working class is able to get control of municipal and local government before it is able to conquer state power This may lead to the development of municipal forms of social ownership of the means of production.

These examples do not exhaust all the possibilities. But they are sufficient to show that the particular historical conditions under which the capitalist system breaks down and the construction of a socialist society begins determine the variety of forms of socialist ownership of the means of production. This fact (as well as the fact that distribution under socialism passes the products of socialist production directly into the private property of the consumers) causes production to have the nature of commodity production.

Therefore the law of value operates.

I might add that the second condition alone is a sufficient one. Even if there were only one form of socialist ownership of the means of production, for instance, national, then by the very fact that distribution passes the products into the individual ownership of consumers would be enough to give to socialist production the character of commodity production and to make the law of value operate. The multiplicity of types of socialist ownership of the means of production is still another reason.

Products become commodities and become subject to the operation of the law of value when they change owners. That happens, as we saw, under a socialist economy. But the question might be asked: how should we consider products which are 'exchanged' between units of the nationalised sector of the economy? If they are exchanged between cooperatives, then they of course pass from one owner to another. But means of production which pass from one unit of the national sector to another do not change owners. I call such products quasi-commodities. The law of value operates here indirectly by means of imputation. Since the final products are sold to consumers or to cooperatives, municipalities or whomever, they are commodities. By imputation this transfers a kind of commodity character to the means of production which have been used to produce the final commodities. The values of the final commodities are by any accounting process reflected backwards to the means of production which are used to produce them.

Thus the law of value operates in a socialist society. But it is not specific to the socialist mode of production alone. It operates also in the capitalist mode of production, just as it operated in a limited way also in the pre-capitalist societies. It expreses a certain common feature of several modes of production.

There is still a fourth type of economic law in a socialist economy. This comprises the laws which are not connected with the socialist mode of production, but result from the particular types of the superstructure of the management of socialist economy. These laws, therefore, change when the organisational and managerial superstructure changes. In capitalist economy there are also laws which are specific not to capitalism as a whole, but to particular types of organisational and managerial superstructure. To give an example, there are general laws of monetary circulation,

which, by the way, are not specific to capitalism but to commodity production. But where there is a gold standard or paper money, specific laws operate which are peculiar to the particular type of monetary system. A second such law in the field of monetary circulation is Gresham's Law, which operates only if both types of metallic money have the same legal value.

Different methods of managing a socialist economy not only change historically and from country to country, but produce their own particular economic laws. They produce specific economic laws because they produce specific incentives and opportunities for action.

There are two points to be considered here: on the one hand the law of value, on the other the relative scope of administrative allocation of goods. In a socialist society the law of value operates. But under certain forms of management of the socialist economy, use may also be made of various administrative allocations (something that sometimes happens under capitalism). Of cour the relative operation and interaction of administrative allocation and of the law of value produce their own economic consequences and regularities which have the character of economic laws operating under these circumstances, for instance, various types of 'blackmarket' phenomena.

Another point relates to the consequences of different types of remuneration for labour: how labour is paid, how far and in what form the workers share in the profit of the enterprise, and so on. These practices produce certain economic consequences (of the nature of economic laws) of a quite regular character. I shall give you an example from our Polish experience. The fact that premiums paid to managing personnel and to workers in the enterprises were related to the extent to which the plan was overfulfilled has caused, with the regularity of an economic law, two consequences: first, the plans are put too low because there is an incentive to have a low plan which can easily be exceeded; secondly, plans tend to be only slightly overfulfilled so tha. they will not be raised too much the following year. For these reasons we have now abolished in Poland the relation between the payment of premiums and the over-fulfilment of the plan. The same procedure is now being proposed in Czechoslovakia. We wish, so to speak, to abolish this type of economic law. Instead, premiums will be based on how much the results of the enterprise improve over the situation

of the preceding year.

This brings me to the question of opportunities and incentives in a socialist economy. The social ownership of the means of production implies new opportunities for economic development. Private vested interests no longer hamper the rational use of the means of production in the social interest. Social ownership of the means of production makes economic planning possible: planning the rate of accumulation, the basic investments which determine the developmental direction of the national economy, the division of the national income, and finally planning production so as to secure coordination of the various branches of the national economy and a harmonious economic development.

These opportunities, however, are only opportunities. They result from the abolition of obstacles (inherent in the capitalist system) which prevent the rational use of the means of production and a harmonious economic development. They do not automatically guarantee the attainment of these objectives. To this end proper incentives must exist in the organisation and methods of management of the socialist economy. Such incentives in part result directly from the socialist relations of production, and in part depend on the organisational and managerial superstructure of the economy.

With regard to incentives resulting from the socialist relations of production, it must be recognised that production and other economic activities are organised in the form of socialist enterprises; that is, they are organisations of activities designed to carry out certain specific social tasks. In order to carry out these tasks properly, the persons participating in the socialist enterprises must be interested economically and morally in the satisfactory performance of the task of the enterprise. The incentives, therefore, must be established in such a way that the personal and collective interest of the staff constituting the enterprise is identical with the social task the enterprise has to perform.

In order that this be the case, the socialist enterprise must satisfy two conditions. It must act as trustee of the general social interest, and it must be a self-governing body. As there are two types of socialist ownership of the means of production, namely, national and group ownership (cooperative, municipal, and so on), there is a difference in the legal status of the corresponding type of socialist enterprises. In cooperatives and other group forms of enterprises,

the group owns the means of production and governs itself autonomously. In nationally-owned enterprises, the enterprise acts as a trustee of the means of production which are national property. In both cases, however, the socialist enterprise is a trustee acting in the general interest of society. This holds also for cooperatives and other enterprises based on group ownership which in a socialist society must act in accordance with the general social interest. The justification for cooperatives and other group forms of socialist ownership is that in certain fields it allows better harmonization of the incentives of the staff of the enterprise with the general social interest. In nationally-owned enterprises, in contrast, there must be substantial self-government of the workers of the enterprise; otherwise the economic and moral incentives are not operative, the enterprise becomes bureaucratic and either does not fulfil its social task or does so very inefficiently.

Thus socialist enterprises must be bodies of self-governing workers acting as trustees of the social interest. Two extremes may endanger the proper socialist character of the enterprise. One is the absence of trusteeship of the public interest. In this case the ownership of the means of production, whatever its formally legal character, ceases to be socialist ownership and becomes purely group ownership devoid of any responsibility to society. I shall call this the extreme anarcho-syndicalist degeneration.

The other extreme, which I shall call the bureaucratic degeneration, is found when there is no effective self-government of the workers in the enterprises. In such cases the socialist character of the ownership of the means of production becomes rather fictitious, because the workers have little direct influence on the practical use made of the means of production; whatever influence exists, goes through the channels of a centralised bureaucratic machine. There arises the danger of a new type of 'alienation' (to use a well-known term of Marx) of the producer from his product; thus there follows a deformation of the socialist character of the relations of production. The socialist ownership of the means of production implies both: the use of means of production in the interest of society as a whole, and the effective democratic participation of the producers and other workers in the administration of the means of production.

These are essential features of socialism. The particular forms in which they may be embodied may vary from country to country,

and from one stage of development of socialist society to another. In the transition period and in the first stages of socialist society, some deformation may take place by necessity. For instance, cooperative ownership may not act sufficiently in the general social interest; or the needs of centralised management may hamper the development of workers' self government. The extent to which such deformations disappear is therefore the measure of the degree of maturity attained by the socialist society.

In addition, as a result of the social ownership of the means of production, incentives can also be determined by the managerial superstructure of the economy, the methods of planning and of realisation of the plan, the principles of economic accounting adopted, the methods of payment of wages and salaries, the types of participation in the profits of the enterprises, the role of the market and so on. All these help to determine the incentives of the workers. Thus proper organisation of the managerial superstructure of the economy is essential to promote the operation of the incentives necessary to assure adjustment of production to the needs of society, the rational use of resources and the promotion of technical progress.

Special consideration has to be given to the role of the state in the construction and guidance of the socialist economy. This role varies in the different stages of its development. Unlike the bourgeois revolution (which came when capitalist relations of production had already considerably developed within feudal society), the socialist revolution precedes the establishment of socialist relations of production. The revolutionary state — the dictatorship of the proletariat — abolishes capitalist relations of production and establishes and organises socialist relations of production. This process may be sudden or more or less gradual, but in any case the political power of the state is the motive force. In underdeveloped countries (in which most socialist revolutions have so far taken place), socialist relations of production result also from the development of productive forces (industrialisation, modernisation of agriculture) which the new revolutionary state initiates.

Thus in the first stages of the emergence and development of the socialist economy, the extra-economic force of the state plays a dominant role. It is the creative factor which brings about the changes from capitalist to socialist relations of production and which, particularly in underdeveloped countries fosters the rapid

development of the productive forces. In this period the economic laws specific to capitalism are being abolished and the economic laws of the new socialist society emerge and take shape. As the economic laws of socialist society become increasingly operative, the role of the extra-economic force of the state recedes. Extra-economic force is replaced gradually by the operation of economic laws, that is, by the establishment of proper economic incentives which produce the results desired by the will of organised society.

The organisational expression of the replacement of extra-economic force by the utilisation of economic laws must be a gradual separation of the management of the national economy from the extra-economic activities of the state, that is, from the exercise of political power. Let me remind you of the distinction made by Engels between 'government of persons,' 'administration of things,' and 'the direction of production processes.' In the long run perspective of communist society, the 'government of persons' gradually disappears, while the 'administration of things' and the 'direction of production processes' remain the chief objectives of social organisation. This is the substance of the process of the 'withering away' of the state.

While this is certainly a long-run perspective, the institutional preparation has to be undertaken at a much earlier stage. It is done through the gradual separation of the institutions of economic management from the institution of political government. As early as 1918, Lenin said in his address to the First Congress of Councils of National Economy:

> There is not the slightest doubt that the further the gains of the October Revolution progress, the more profound the change which it commenced becomes, the more firmly the gains of the socialist revolution become established and the socialist system becomes consolidated, the greater and higher will become the role of the Councils of National Economy, which alone of all the state institutions are destined to occupy a permanent place. And this place will become all the more durable the more closely we approach the establishment of the socialist system and the less need there will be for a purely administrative apparatus, for an apparatus which is solely engaged in administration. After the resistance of the exploiters has been finally broken, after the toilers have learned to organise socialist production, this apparatus of administration in the proper, strict, narrow sense of the word, this apparatus of

> the old state, is doomed to die; while the apparatus of the type of the Supreme Council of National Economy is destined to grow, to develop and become strong, and to perform all the main activities of organised society.

The process of gradual separation of economic management from political government thus prepares the institutional conditions for the 'withering away' of the state. The gradual reduction of political guidance of economic processes is an essential reflection of the process of maturation of the socialist society. The further away socialist society has moved from its capitalist heritage, as well as from the heritage of the period of transition, in which extra-economic force plays a decisive role, the more the guidance of economic processes becomes separated from the exercise of political government. This process prepares the long-run perspective of the 'withering away' of the state.

2

ROLE OF PLANNING IN SOCIALIST ECONOMY*

Oskar Lange

ECONOMIC PLANNING, or more precisely, the planning of economic development is an essential feature of socialism. It expresses the fact that socialist economy does not develop in an elemental way, but that its development is guided and directed by the conscious will of organised society. Planning is the means of subjecting the operation of economic laws and the economic development of society to the direction of human will.

The experiences of the construction of socialism in various countries indicate that the establishment of planned economy is one of the first achievements of the socialist revolution. It precedes the full development of socialist relations of production though it needs a certain minimum of such relations. In the transitional period, when non-socialist modes of production still play an important role, the economy becomes already subject to planned direction of its development. This is made possible by the existence in the economy of a large socialist sector which controls, as one frequently says, the 'commanding heights' of economic life. This is the minimum requirement of establishing a planned economy.

Economic planning starts with the direct intervention of the state in economic relations. This intervention has for its objectives the liquidation of capitalist relations of production, the establishment of socialist relations of production and the control of the non-socialist sectors of economy which still remain. The basis which makes control of the non-socialist sector possible, is the existence of a socialist sector, particularly that part of the socialist sector which is nationalised (i.e. state-owned), and which controls the commanding outposts of the economy.

* An address delivered on 19 November 1957 at the Institute for International Politics and Economics, Belgrade.

In this first, transitional phase the new revolutionary state is not neutral in relation to the various sectors of economy. It consciously utilises the nationalised socialist sector as an instrument to regulate the development of the whole economy. The means it utilises consist of economic instruments which result from the existence of the nationalised sector comprising the decisive controlling part of the economy, and also of intervention by political force, i.e. non-economic force. In the first revolutionary period, intervention in the economic processes by political force plays a decisive role.

In the first phase of development of a socialist economy, both the planning of economic development and the day-to-day management of the socialist sector is highly centralised.

There may be some doubts as to what extent this represents a universal necessity. For instance, in Poland, we had some discussions whether the transition through such a period of highly centralised planning and management was a historical necessity or a great political mistake. Personally, I hold the view that it was a historical necessity.

It seems to me that the very process of the social revolution which liquidates one social system and establishes another, requires centralised disposal of resources by the new revolutionary state and, consequently, centralised management and planning. This holds good, in my opinion, for any socialist revolution.

In underdeveloped countries, there has to be added a further consideration. Socialist industrialisation — and particularly very rapid industrialisation — which was necessary in the first socialist countries, particularly in the Soviet Union, as a political requirement of national defence and of the solution of all kinds of political and social problems due to backwardness, requires centralised disposal of resources. Thus the very process of transformation of the social system and in addition, in the underdeveloped countries the need for rapid industrialisation, impose the necessity of high centralisation of planning and management.

The process of rapid industrialisation requires such centralised disposal of resources for two reasons. First, it is necessary to concentrate all recources on certain objectives and avoid dissipation of resources on other objectives which would divert resources from the purpose of rapid industrialisation. This is one of the reasons which leads to highly centralised planning and management and also to the allocation of resources by means of administrative

establishment of priorities. The second reason why rapid industrialisation demands centralised planning and management is the lack and backwardness of industrial cadres. The cadres who are available in the period of rapid industrial growth are new and inexperienced. Such old cadres who possess some experience in management of industry and other economic activities are frequently politically hostile to the socialist objectives. In consequence, high centralisation of managerial decisions becomes necessary.

Thus the first period of planning and management in a socialist economy, at least as far as our experience goes, has always been characterised by administrative management and administrative allocation of resources on the basis of priorities centrally established. Economic incentives, during this period, are replaced by moral and political appeals to the workers, by appeals to their patriotism and socialist consciousness. This is, so to speak, a highly politicalized economy; both incentives it utilises.

This, I believe, can be described broadly as a *sui generis* war economy. The methods of war economy are not peculiar to socialism; they are introduced in capitalist countries, too, in war time. It was during the First and Second World War that these methods were first evolved. In capitalist countries, similar methods, viz. concentration of all resources towards one basic objective, which is the production of war materials, centralisation of disposal of resources in order to avoid leakages of resources to everything that was considered non-essential, i.e. everything not connected with the prosecution of war, were used during war time.

Allocation of resources by administrative decision according to administratively established priorities and large-scale use of political incentives to maintain the productivity and discipline of labour through patriotic appeals were characteristic of war economy. This was done in all capitalist countries during the war.

Thus it is that such methods of centralised planning and management are not peculiar to socialism, that they are rather certain techniques of war economy. The difficulty starts when these methods of war economy are identified with the substance of socialism and are treated as being essential to it.

One of the methods of war economy, which most of the socialist countries have resorted to at one stage or another, is the compulsory delivery by peasants of part of their product. Many Communists in Poland feel rather upset by the present programme of our

government of abolishing such deliveries. They fear that this implies giving up of some socialist principle. I usually answer them by asking if they remember who first introduced compulsory deliveries in Poland. For, the fact is that such deliveries were first introduced during the First World War by the occupation army of Kaiser Wilhelm the Second, whom I do not think anybody regards as a champion of socialism. These methods cannot be considered as an essential aspect of socialism; they are merely methods of war economy necessary in a revolutionary period of transition.

The fate and history of these methods is a classical example of the dialectical character of the development of socialist society. Methods which are necessary and useful in the period of social revolution and of intensive industrialisation become an obstacle to further economic progress when they are perpetuated beyond their historic justification. They become obstacles because they are characterised by a lack of flexibility. They are rigid, and they lead therefore to waste of resources, resulting from this inflexibility; they require a wasteful bureaucratic apparatus and make it difficult to adjust production to the needs of the population. However, it seems that the greatest obstacle to further progress results from the lack of proper economic incentives in this bureaucratic centralistic type of management. This hampers proper economic utilisation of resources, encourages waste and also hinders technical progress.

Therefore, the moment when socialist society starts to overcome these centralistic, bureaucratic methods of administrative planning and management, indicates, so to speak, that the new socialist society has matured. In the earlier discussion we spoke about the period of transition — when it ends and how it should be defined. I would not want to enter into the problem here and make this a final definition of the period of transition. But I might say, that the substitution of the methods of administrative and centralised management and development by new methods based on the utilisation of economic laws indicates the end of the period of transition and the beginning of the functioning of an established socialist economy. I would not say that this is the only aspect of the problem of the period of transition, but it certainly is an important aspect of it.

The period of centralised planning and management, as I said,

is the result partly of the requirements of the revolutionary transformation of society and, in underdeveloped countries, also of the needs of rapid industrialisation. In studying this period a certain important sociological factor has to be taken into account, and that is the weakness of the working class in an underdeveloped country. It seems to me that it is on the basis of this weakness of the working class, under conditions of underdevelopment, that the bureaucratic state machine gains great importance, and phenomena like that of the 'cult of personality' develop. It substitutes, in certain sense, the spontaneous activity of the working class.

But here again the dialectics of the processes of construction of socialism becomes apparent. The centralistic methods are successful in achieving rapid industrialisation and, as a consequence, cause a rapid growth of the working class. The working class grows in numbers as well as in consciousness and political maturity. Next to the growth of the working class, another important sociological element appears. This is the growth of a new socialist intelligentsia, which largely comes from the ranks of the workers and peasants. When it becomes clear that the highly centralised administrative and bureaucratic methods of management create obstacles to further progress, even a part of the political and state apparatus becomes convinced that a change of methods of administration and management is needed. Thus new social forces mature which require and also make possible a change of these methods.

This, precisely, is the basic difference between the development of socialist society and a society which is based on class relations. There is no force which may oppose these changes. There may be, as I said earlier, certain strata or groups, which have a vested interest in the old methods and create obstacles, but these obstacles can never become of such importance as to make impossible the changes required by new historical circumstances.

This becomes very clear if you take, for instance, the experience of Poland, where industrialisation by means of centralised administrative planning and management has led to a great increase of the working class. Our working class is now more than three times what it was before the war. The working class has gained experience in large industrial establishments. It was, at first, to a large extent of peasant origin and that, of course, weighed on its psychology. But that was only a transitional phase. Industrialisation and the social revolution have created a new in-

telligentsia, largely coming from workers and peasants. All these have led to a maturation of the forces of the new socialist society. In consequence we got such a phenomena as the great movement of workers' councils demanding self-government of workers in industry, the general demand to change the methods of management of the national economy. The Party has accepted these demands and given them organised expression.

Changes in the methods of planning and the management of the economy are taking place today practically in all socialist countries. Forms, contents are different, but all these changes imply a certain decentralisation or deconcentration of management of the economy. I do not want to enter into a description of what is happening in the various socialist countries. I shall rather present to you what I personally believe is the proper formulation of the role and methods of planning in a socialist economy.

Firstly, it must be stated that in a socialist society planning of the economy is active planning. Some of the economists in Poland use the term 'directive planning', but this term is ambiguous; I shall rather use the term 'active planning'. By this I mean that planning does not consist only of coordination of the activities of various branches of the national economy. It is something more, namely, it is an active determination of the main lines of development of the national economy. If planning is mere coordination, the development of socialist economy would be elemental; it would not really be directed by the will of organised society. If economic development is not to be elemental but is to be directed by organised society, then planning must be active economic planning.

Two problems arise with regard to active economic planning. They are: (1) what is the scope of active economic planning? What are the activities in the economy to be planned? And (2) what are the methods to be used in securing the realisation of the plan?

The active character of planning does not require that the plan goes into each detail of economic life. Most of the socialist countries, perhaps with the exception of China which benefited by the experiences of other socialist countries, have passed through a period when the output of even the least important commodity was planned. In Poland there was the famous joke — really it was not a joke, but it was true — that the production of pickled

cucumbers was included in the national economic plan. Another case, which was not a joke either, was that the State Planning Commission made a plan of the number of hares which will be shot during the year by hunters. At the same time, you could not get, for instance, buttons or hairpins for ladies, simply because they had forgotton these items in the national economic plan.

Active planning and effective direction of the development of the national economy is quite possible without planning such details. Even more, planning such details hampers effective direction of the national economy. It may be said that putting such details in the national economic plan had nothing to do with planning. It was a part of the high centralisation of day-to-day management of the economy by means of administrative measures. This is a different thing than planning.

However, the national economic plan, which to determine the development of the national economy, must include at least two things. Firstly, the division of our national income between accumulation and consumption. Secondly, the distribution of investments among the different branches of the economy. The first determines the general rate of economic growth, the second determines the direction of the development.

Unless these two things are in the plan, there can be no active guidance of the development of the national economy. This is, therefore, the minimum requirement of the plan. In addition, the plan may or may not include the targets of the production of certain basic commodities, like basic raw materials, basic means of production. and so on. These are technical and not fundamental problems.

These are the fundamental aspects of the plan which determine the pace and the direction of development of the economy. In addition to these, economic planning must be concerned with coordination of the activities and the various branches of the economy. First of all, coordination of the financial and physical aspects of the plan, in particular coordination of the total purchasing power at the disposal of the population and the amount of consumer goods which are provided for individual distribution. The plan must also in some way and by some means be interested in the coordination of the output of the various branches of the national economy. Otherwise, the determination of the directions

of development established by the plan may become impossible to realise. If there is no proper coordination between the output of the various branches of economy, investments may not be possible to be realised, because the necessary investment goods are not produced. All kinds of dislocations may appear and cause difficulties which may make it impossible to carry out the investment plan. So much about the content of the plan.

The second problem is concerned with the methods of securing the realisation of the plan. Here we have basically two possible methods, one of which is administrative orders and administrative allocation of resources. The various units in the socialist economy are required to do certain things, for instance, to produce such and such thing in such and such quantity. The resources which are necessary for that purpose, both material and financial, are allocated in an administrative way. This was the traditional method of realising the plan in the past period. The second method consists in the use of what we call 'economic means,' namely, of setting up a system of incentives which induces people to do exactly the things which are required by the plan. It seems to me, that in an effective planning of a socialist economy, both methods have to be used, though in different proportions.

Preference should, however, be given to the use of economic means. Administrative methods should be limited to such fields where, for one reason or other, economic means are ineffective. Such situations, where economic means are not effective, always do exist. They exist particularly in periods of very great changes, because economic means are rather subtle instruments responding to 'normal' changes in the situation, and frequently breaking down when very fundamental or revolutionary changes are needed. In such cases the use of administrative means must be accepted. Even in a capitalist economy, in situations of profound changes, the state introduces in its economic policy measures of administrative control because the normal kind of economic means are not sufficient to provoke the responses which are necessary.

The fundamental decisions of the plan concerning the division of national income between accumulation and consumption and concerning the basic directions of investments are really of a political character while the means of implementation must be partly administrative. The decision of the plan concerning the rate of accumulation is basically realised by administrative measures.

Part of the national income produced is not paid out in the forms of individual incomes, part of the profits of the socialist enterprises are held back by the state — all these are administrative measures. So also are all forms of taxation of enterprises and individuals. The basic directions of investments, for instance, the decision to build an electric power plant are usually not made as a reaction to market situations, but are made as basic decisions of economic policy. Though in this case the realisation of the decision may make use of all kinds of economic instruments.

We may ask in what sense must economic plans take account of economic laws. Even when the realisation of the plan is achieved by administrative measures the plan must observe the general economic laws concerning the proportions necessary in the process of production and reproduction. For instance, if the plan envisages an increase in the production of steel, it must also provide for a certain additional output of coal which is needed to produce the additional steel. Planning has to take account of such objective kinds of relationships.

There are also other economic laws which must be observed by the plan. These are the laws which result from the operation of economic incentives under the circumstances created by the plan. The process of realisation of the plan sets into motion definite economic incentives to which the people react in a certain way which can be calculated. Even in the period of administrative planning, certain economic incentives were operative and their consequences had to be taken into account. In this period, however, economic means were only subsidiary in relation to the administrative. The situation now has to change, in the sense that economic means are now the rule and administrative means only a subsidiary. Thus the plan has to observe the laws of production and reproduction, in so far as the realisation is based on the use of economic means, i.e. the operation of economic laws.

By utilising economic means planning makes use of the automatic character of people's responses to given incentives. Thus certain automatic processes in the economy are established. However, these automatic processes are not elemental. These two things should be distinguished. The difference is that in a socialist society, where the automatic processes are part of the method of realisation of the plan, the conditions establishing incentives are set up by economic policy, whereas in capitalist society these conditions

develop in an elemental way. There is a basic difference: in one case (i.e. capitalist) the incentives develop in an elemental way and are not subject to conscious control of society, while in the other case (i.e. socialist) they are consciously established by organised society in such a way as to produce the desired results. As Engels said: 'The social causes set into motion will produce to an ever increasing extent the results desired by man.'

I shall illustrate this by an analogy. The capitalist economy may be compared to an old fashioned balloon which is moved by the current of air in the direction in which the wind pushes it. Man has no control whatever over the direction in which the balloon is moving. The socialist economy in the period of realisation of plan by administrative measures can be compared to an old fashioned airplane, where the pilot with his hands moves the steering rod. By sitting always by the steering rod the pilot directs the plane in the direction he chooses, whenever the current of the air changes he moves the rod in such a way as to keep his chosen direction.

I would compare planning in which the realisation is based on economic means to a modern plane which has an automatic steering mechanism. The pilot sets the mechanism in the direction in which he wants the plane to go and the automatic mechanism keeps the plane in the desired direction. The pilot can read a book or a newspaper in the meantime, and the plane by itself keeps the desired course. But it is not the direction where the wind pushes the plane but the direction which the pilot has chosen, consciously chosen. It is the pilot who determines the direction of the plane, if he wishes he can change the direction by setting the automatic mechanism in a different direction.

If I would carry the analogy to the end, I would say that the pilot must, of course, from time to time, watch whether the automatic steering mechanism works. As a rule, experience shows that for the time when the wind is very strong the automatic mechanism does not work and the pilot has to take the steering rod in his hand and steer himself. When the wind becomes more quiet he can again let the automatic mechanism do the work. In sudden upsetting situations, administrative measures have to be used in managing socialist economy.

The next problem is to what extent the decisions implied in the plan, not the realisation, can be centralised, or can, or even must be decentralised. The need for centralised decisions obviously

results from the need for coordination. Such decisions like the basic directions of investments, since they also must be coordinated through the coordination of various branches of economy, must be centrally planned. I would say that the basic decisions of the plan must be made centrally. In addition to that the plan may have as subsidiary parts certain decentralised subsidiary plans, in order to secure the proper flexibility of the plan. There are two criteria which determine the decentralisation which economic planning can or must have. One determines the possibility of decentralisation and the other the necessity of decentralisation.

Economic planning can be decentralised if it is possible — and to the degree it is possible — to set up economic incentives in such a way that the decisions of the decentralised units are the same as the decisions which would be made centrally. Secondly, economic planning must be decentralised in all cases where the central decision responds to a situation too late. Because in such cases, unless there is decentralisation, central planning becomes fictitious, what actually is obtained is an elemental development. It is important to notice that in all socialist countries, in the period of highly centralised planning and management, there was a great number of this type of elemental processes in the economy.

For instance, in Poland, at a certain period the amount of elemental processes became so great that you could ask if there still existed a planned economy. On the one hand this was a plan, but on the other the economy produced results in a very elemental way. The elemental character of this process was the result of two factors. One was the over-centralisation of the plan. Before developments that took place in various branches of the economy came to the attention of the central authority and before the central authority took action, irreversible things had already happened. The result was purely elemental. The other factor was the existence of 'wrong' economic incentives. When the old incentives of the moral and political appeal stopped working, because such incentives can only work for a certain period, it was discovered that all kinds of incentives were implicit in the plan of which the central authority did not know, and which hampered the realisation of the plan.

Thus it is a question of practical importance how many of the decisions are made in the central economic plan, and how many decisions are delegated to lower economic units, etc. This is parti-

cularly important with regard to the investement plans. In Poland, for instance, we are now evolving a scheme which provides central planning of what we call fundamental investments, i.e. the building of a new plant or enlarging substantially an existing plant. We shall give the enterprises the right to undertake the subsidiary investments autonomously without asking anybody for approval.

The latter has proved to be necessary in order to assure greater flexibility of investment decisions. Our experience shows that by the time the unit concerned received the approval of the central authority to undertake the necessary investements, the situation had already changed. Thus the situation was clearly inflexible. The financial resources for such subsidiary investments would consist of a part of the amortisation fund of the enterprise and of bank credits it could take up for the purpose of such investments. Investments of small enterprises are to be entirely financed by bank credits, without appearing at all in the central economic plan.

Now one thing should surely be kept in mind. The fact that a part of that investment is financed by bank credits do subject them in an indirect way to central planning because, obviously, the bank can refuse to give the credit. The bank acts on the basis of a certain general economic policy — how much credit it can advance and to what purpose and under what conditions. These are indirectly the ways of influencing by the central authority of the subsidiary investments.

A similar economic problem, and a more acute one, exists with regard to the planning of production. In the former period even the least important product had to be in the central economic plan. Now, however, only the basic production of enterprises is included in the central economic plan, the enterprise having the right to undertake what is called subsidiary production, which is not in the plan. There is quite a discussion among Polish economists as to whether production should be in the economic plan. There are a few who think that production should not at all be on the economic plan, it should only respond to the economic incentives of the market. The practical solution which will probably be adopted in Poland will be to put in the central economic plan the output of certain basic commodities, like coal, steel, raw materials, certain means of production, textiles of mass production, i.e., commodities of special significance to the national economy. As to the rest, the enterprises will have a plan of output in terms of total net

value of output without prescribing the specific varieties. A shoe factory, for instance, will have only a total value plan of output and it will have the right to produce any variety of shoes, according to its own decision.

All these are already problems of techniques and not problems of principle. I think that the one essential thing in the socialist economy is that the plan has to be an active plan which determines the pace and the direction of development of the national economy. The other things are really questions of techniques which may change under different conditions. There is, however, one more problem which I want to mention in this connection. This is an essential and not a technical thing — the plan must be based on correct economic accounting. Correct accounting of economic costs and economic benefits, and consequently a correct price system, are indispensable.

In a socialist economy prices have two purposes: one is as a means of distribution and the other as a means of economic accounting. Therefore, there are two principles which must be taken into account in the formulation of prices. This requires some calculation, of two kinds of prices, viz. market prices and accounting prices.

Unless distribution of consumers' goods is done by rationing, the market price must obviously be such as to establish equilibrium on the market, to equalise demand and supply. The same holds good also for prices of the means of production when administrative allocation is removed and enterprises freely buy and sell their products. Market conditions determine the equilibrium prices which equalise demand and supply. The principle of determining the market prices is very simple: they simply must equalise demand and supply.

Market prices, however, are not sufficient. In addition there must be calculated accounting prices which reflect the social cost of production of the various products. The accounting prices, may surely strongly differ from the market prices. We propose now, in Poland, to calculate what we call the initial or normal prices which would be the cost of production plus a profit, which will serve to cover accumulation and collective consumption of society. To these normal prices we propose to add a positive-or-negative marking in order to obtain the market prices which equalise demand and supply on the market. Then the positive-or-

negative differences between the market prices and the normal prices would be an indicator for economic planning.

The indication would be to increase in the next plan the output (by making the necessary investments) of the commodities, where the market price is high above the normal price, to stop expansion or even scale down output where the market price does not even realise the normal price.

The great controversy at this moment among Polish economists concerns the rate of cost that should be included in the normal prices, whether it should be average cost of the enterprises in a given industry or marginal cost. The majority of economists take the view that it should be marginal cost. The others are in favour of average cost. But those who are in favour of average cost really consist of two groups: one group which in principle are in favour of average cost, the other, in principle, are in favour of marginal cost but believe that it would, in practice, be a very difficult system of calculation. And thus it is that they take average cost, simply because the other solution, though theoretically better, is very difficult to realise in practice.

The proponents of marginal cost, of course, propose to use a practical approximation to marginal cost. The cost on the basis of which the normal price is to be calculated is the average variable cost of the group of enterprises which have the highest cost in the industry. Classify the enterprises into several groups (not too many, because it has to be practically easy) and then take the group of enterprises which have the highest cost as the pilot group which serves as the indicator and take the average variable cost in this group. There is a reason why that average variable cost should be taken. If we take just one enterprise at random we may get a very accidental result, and we do not want to have purely accidental fluctuations. We want to have something which represents the real cost structure of the industry. Therefore we take the average variable cost of the enterprise in that last group.

The argument in favour of marginal cost and of this procedure of practical interpretation of marginal cost is this. We have, for instance, electric power plants. Each plant produces at a different cost. Suppose we save some electric power, what then is the diminution of cost to society? Obviously, when we save electric power we will stop or diminish production not in the plants which have the lowest cost, but in the plants which have the

highest cost. The cost in the latter plants represents the resources we save, it represents the saving of cost to society. If we have to expand output of electricity, the cost to society is the cost of operation of electric power plants which produce at the highest cost and which are necessary to cover the increased demand for electricity. Consequently, if variations in the use of electric power take place, the effect on cost to society of these variations is in the most costly plants, i.e. the marginal cost. We consider the average variable cost in the most expensively producing power plants because the fixed cost is already given and does not change in consequence of a change of utilisation of electricity.

This is basically the system which a majority of Polish economists propose. To the marginal cost there must be added something to cover all the fixed costs in the industry. This may be zero, because the larger profits of the enterprises which produce at lower cost may be sufficient for this purpose. If that is not the case, we will have to add to marginal cost. Such additions would have to be, everywhere, proportional to the marginal cost so that the normal prices would be proportional to the marginal costs of the various products to cover the fixed cost.

The indicator for the plan would be whether the market price is higher or lower than this normal price, i.e. whether it socially pays to expand or reduce the output of a product. I have to add that this normal cost would also have to include a surcharge to cover capital accumulation, and collective consumptions would have to be in the same proportion in all branches of the economy so as not to effect the proportions between the normal prices and marginal costs.

So much on this subject. It should now be clear that good and effective economic planning requires a development of economic science, that it must be based on scientific economic analysis. This is one of the basic differences between socialist and capitalist economy. In capitalist economy the economic processes are elemental, whereas under socialism they can be directed on the basis of scientific knowledge of the needs and possibilities of the whole national economy.

3

BASIC PROBLEMS OF SOCIALIST CONSTRUCTION

Oskar Lange

THE TRANSITION FROM CAPITALISM to socialism takes place differently than the transition from feudalism to capitalism. Capitalism is born in the womb of feudalism. The rise of cities and of the bourgeoisie, and the growth of commodity production contain elements of capitalism. Capitalist production relations thus originate in the loins of feudal society. Trade and usury provided the means from which developed the first capitalist production enterprises — mostly in manufacturing. The mass expropriation by capital of small handicraft production, dispossession of the peasants from the land, as well as the plunder of colonial countries constituted the primary sources — i.e. primitive accumulation — of the growth of capitalist production. All this took place within the framework of the old feudal society, while feudal relations still reigned in agriculture, while production was greatly restricted by guild regulations in the Middle Age town, and when the political superstructure which grew out of feudal monarchy was changing into absolute monarchy.

Feudal relations in agriculture, guild restrictions of production in the towns — the whole feudal monarchical superstructure — were obstacles to the further development of capitalist production. These resulted in bourgeois revolutions which eliminated these obstacles, and what is most important, they abolished the whole political superstructure of feudal monarchy.

The bourgeois revolution thus cleared the road for the further growth of capitalist production. It took place in the main West European countries and in America — first in England, next in America (the War of Independence), and then in France. In other countries, however, the process of transition from feudalism to capitalism developed gradually. Thus, in feudal Germany the state superstructure as well as feudal agriculture adapted themselves

gradually to capitalist relations and were drawn into capitalist development. Elements of gradual transition were manifested also in England, where the bourgeois revolution did not assume so radical a character as did the Great French Revolution. However, a characteristic feature everywhere of the transition from feudalism to capitalism was the fact that capitalist production relations first arose in industry and only then ensued the elimination and transformation of feudal relations in agriculture. The political revolution then changed the state superstructure and in this manner finally cleared the road for full capitalist development.

The transition from capitalism to socialism takes place in an entirely different manner. Socialist production relations do not arise in the womb of capitalist society. Only in certain spheres of private industry does capitalist production change to state capitalism. We know, for example, what role the nationalised branches of industry play today in the leading capitalist countries, particularly in Great Britain and France. This undoubtedly attests to the fact that the economies of these countries have outgrown the possibilities of private capitalist organization and require new organizational forms. In certain branches, such as power, coal mining, transportation, the new organization of production relations must be created by the capitalist state. The old type of capitalist production relations is already too narrow for the capitalist economy; it requires state regulation by means of the nationalisation of certain economic sectors and elements of planned state intervention in economic life.

But this is not in the least equivalent to introducing socialist production relations. For, nationalisation and intervention in economic life are performed by the capitalist state, in which the dominant, decisive role is played by the capitalist class. Furthermore, under the pressure of big monopoly capital in the epoch of imperialism, the capitalist state becomes converted into the political instrument of the dominant monopolies.

From the very beginning, the labour movement and Marxist theory distinguished state capitalist elements from socialism. It suffices to refer to what Engels wrote on this question in *Socialism : Utopian and Scientific.*[1] The old Marxist school of the Second

[1] In Karl Marx and Frederick Engels, *Selected works*, Vol. II (Moscow, 1949).

International period correctly evaluated the phenomenon of state capitalism. However, by the end of the nineteenth century the revisionist current, which emerged in the labour movement, saw in the state capitalist forms and in state intervention in economic life the rise of new, socialist production relations. This revisionist error consisted in the main of a failure to recognise the class character of the power which created state capitalist forms of economic life. The change of forms is not introduced in the interests of the working class or of society as a whole but in order to sustain the capitalist economy, on the one hand, and on the other to serve the narrow interests of certain dominant monopoly-financial groups. These groups exert decisive influence on the state power and utilise it for their own interests. Hence, state capitalism does not even serve the interests of the capitalist class as a whole but only those of a narrow monopoly capitalist group.

Socialist production relations — which transform the capitalist economic structure into a socialist one — ensue only after the victory of the proletarian revolution, hence after the acquisition of political power by the working class.

The basic distinction between the bourgeois and proletarian revolution consists in the fact that the former is accomplished on the foundation of capitalist production relations, already developed to a certain extent within the womb of the old feudal society. The bourgeois revolution removes the obstacles to the further development of those relations but it does not create them. As we have indicated, they are created spontaneously within the womb of feudal society. The bourgeois revolution constitutes a kind of completion of capitalism's birth process which at the same time opens up for the capitalists possibilities of full development, which they did not possess under the feudal order.

The proletarian revolution, on the contrary, precedes the emergence of socialist production relations. Only working class power first liquidates capitalist production relations and makes possible the construction of socialist production relations. This constitutes the basic distinction between the bourgeois and proletarian revolutions. It may be said that the bourgeois revolution already possessing the foundation of the new social system or at least important elements of that foundation — effects changes in the political superstructure, which in turn open a free road to the full development of the foundations of the new society. However,

the proletarian revolution and the new political superstructure erected by it, liquidate the bases of the hitherto existing capitalist society and create the prerequisites for constructing the foundations of the new society. It is clear that the establishment of the new political superstructure — working class power — does not itself come spontaneously. It is the result of sharpening class contradictions within capitalist society — contradictions between the capitalist production relations and the further growth requirements of the social productive forces.

As we saw, the new social foundation arose only after the political revolution was accomplished. The new political power — serving as the motive-force of the transformation from capitalist to socialist production relations — is defined by the concept 'dictatorship of the proletariat'. This term indicates that it is the power of the working class (in alliance with the peasantry) over the former ruling classes, which removes the economic foundations of the old society and lays the foundations of the new social order.

The dictatorship of the proletariat may assume various political forms. It may assume the form of a soviet republic or a people's democracy; or of a democratic parliamentary republic, which Engels in fact regarded as the typical form of the dictatorship of the proletariat for Western Europe. The form of the dictatorship of the proletariat depends upon the whole picture of the historical conditions in a given country. But the social functions of this new state power, its content, is everywhere the same — the elimination of capitalist production relations and the construction and organization of socialist production relations.

Already at the end of the nineteenth century revisionists denied the principle of transition to socialism by means of the dictatorship of the proletariat. They believed that socialist production relations could be established within the framework of the capitalist system. They identified state capitalist economic forms with socialism and advanced the view that the state-political superstructure adapts itself gradually to this spontaneous process of economic development. They called this 'growing into socialism.' This theory is today advanced in one or another variant in social democratic programmes.[2]

[2] It is necessary to distinguish between two views in relation to the social democratic position on the question of the transition period. One,—the old revisionist wing of the German social democracy at the turn of the century,—

The need for a certain *transition period*, or *a period of socialist construction* results from the fact that the transition from capitalism to socialism follows the political revolution which establishes the dictatorship of the proletariat, and launches the reconstruction of production relations — effected by it. In contrast to the bourgeois revolution, the proletarian revolution is not the completion of a spontaneously executed process of development. It is but the beginning of a conscious process of the reconstruction of society, which, depending upon certain conditions, may last a longer or shorter period. This reconstruction of the social structure is not performed spontaneously—as was the case with the transition from feudalism to capitalism — but is the *conscious and purposeful activity of the dictatorship of the proletariat*, i.e., of the new state as the organiser of socialist construction. The working class cannot accomplish the conquest of political power and the direction and leadership of the process of reconstruction of the economy — the process of building socialism — as an unorganised class. It can accomplish this as a class, whose advanced section at least is organised in a revolutionary party. The party leads the working masses in conquering state power. It guides the process of maintaining the state power and of building socialism.

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advocated the theory of growing into socialism; while the other wing, led by Bebel and Kautsky, stood on the position of Marxism.

In 1902 Kautsky published his work, entitled *The Social Revolution*, in which he attempted to formulate his views on the transition period for the first time.

Without evaluating here the political ideas of social democracy, it is possible to state that its original views on the transition period are basically similar to those which were later crystallised in Marxist literature in one or another variant. This pertains, first fof all, to Kautsky's first work in 1902, in which there is reference to the first stage: to the expropriation of capital and gradual socialist transformation of agriculture by means of cooperation.

In later literature, of which the same Kautsky was partly the author (in the period of the German and Austrian revolutions), two basic elements were lacking: 1) the political necessity of expropriating the existing exploiting classes, and 2) the need for the dictatorship of the proletariat. That literature likewise says nothing about socialist industrialisation; for the authors expected that the highly developed capitalist economy would gradually be transformed into a socialist economy.

After World War II the social democratic parties to an ever greater degree rejected the programme of socialist transformation of the economy and limited themselves solely to the conception of reforming capitalism. There exist fundamental differences between the classical programme of social democracy and those of the contemporary German, French and partly British social democracy. The contemporary programmes of social democratic parties have lost their socialist character.

The mere existence of a working class party is, however, not sufficient. To accomplish its tasks the party must base its policies and activity on a scientific understanding of the laws of social development. It must base itself on the contemporary science of socialism, hence on the foundation of Marxism-Leninism.

Let us see which problems in the period of socialist construction confront the party of the working class and the state power which it guides. There are some problems which the party and the state must solve instantly and others whose solution takes place gradually. Problems demanding instant solution — we will call them immediate problems — extending partly from the period preceding the socialist revolution to the period of struggle for the conquest of power — are the problems of *allies of the working class* in the struggle for power and for maintaining power.

Those who are the allies of the working class in the struggle for, and in the conquest of power, are by the nature of things also its allies in maintaining power. This is a natural consequence at least in the first period of maintaining power.

A distinguishing feature of capitalist development is the fact (among other things) that its decay ensues earlier than the elimination of all non-capitalist production forms. Appreciable elements of feudal relations remain to a greater or smaller extent within the framework of capitalist society in various countries. Exceptions are countries like France — where the radical bourgeois revolution tore up feudalism with the roots — and the United States — where feudalism never existed.

Moreover, an appreciably developed sector of peasant and handicraft petty commodity production exists within the framework of capitalist society which comes into conflict with big monopoly capital. Another part of the capitalist economy — small scale production — also comes into conflict with big monopoly capital to the degree of the latter's growth.

It is clear that the peasantry, the petty-bourgeoisie and, under certain conditions, a section of the bourgeoisie as well — namely, that section which finds itself in conflict with big monopoly capital — may be, and as a rule are, the allies of the working class.

Before World War I there existed a tendency in the labour movement to overlook the problem of the allies of the working class. It was expected that the socialist revolution will mature in the degree that capitalism eliminates the middle classes and that the

class struggle as a whole is polarised into a conflict between capital and labour. Reflections of such tendencies may be found in a good part of the Marxist literature of the Second International period. This tendency appears most glaringly in the work of Rosa Luxemburg. In a later period her theories gained the title 'Luxemburgism' and in its time played a dominant role in the Social Democratic Party of Poland and Lithuania (SDKPiL). Rosa Luxemburg thought that capitalism will eliminate all middle strata, that it will proletarianise and depress them into the ranks of the working class, and that the socialist revolution will consequently be achieved by the working class alone.

Undoubtedly, such tendencies exist in capitalism. However, the internal contradictions of capitalist society mature appreciably faster than the realisation of these tendencies. The conflict between big capital and the peasantry, the petty bourgeoisie generally and even a certain section of the bourgeoisie was created especially by the rise of monopoly capitalism and imperialism. This phenomenon appears in a different manner in different countries. We know from historical testimony that the conflicts within capitalism are sharpest in so-called underdeveloped countries, in which capitalism has not penetrated sufficiently to destroy the existing social structure, in which the countryside is over-populated (relatively) and where the standard of living of the toiling masses and the petty bourgeoisie are low; capitalism did not succeed in creating in these countries conditions for the full development of the capitalist productive power.

We will not deal here with the cause of this phenomenon. It is however connected with the nature of contemporary capitalism which is able to remove certain contradictions and difficulties in the development of advanced capitalist countries at the expense of underdeveloped countries, exploited by big monopoly capital.

The first socialist revolutions took place in countries with large non-capitalist strata of toiling peasants, handicraftsmen, petty bourgeoisie as well as sections of the bourgeoisie in conflict with foreign imperialist capital (for example China, where the national bourgeoisie played a special role in the revolution).

The question of working class allies is particularly sharp in underdeveloped countries of people's democracy, but it appears as well in capitalist countries. A whole series of elements of this question is to be found in Italy and France, for example.

Besides, the question of working class allies appears also on an international scale. The anti-imperialist national liberation movements of the national bourgeoisie, the intelligentsia, petty bourgeoisie, the peasantry as well as the working classes, of nations fighting against imperialism, are allies of the working classes of the countries building socialism and of the advanced capitalist countries.

The principal ally of the working class in Eastern Europe and Asia is the peasantry. This is related to the recently existing feudal remnants in those countries on the one hand; and on the other, of the recent exploitation of the peasantry by native and foreign big monopoly capital. This is why the basic foundation of the struggle to conquer state power and maintain the dictatorship of the proletariat in these countries is the working class-peasant alliance

The sphere of the working class alliance may be wider or narrower depending on the specific conditions in different countries. As indicated above, the national bourgeoisie played an important role among the working class allies in China; this is the section of the bourgeoisie which found itself in conflict with foreign imperialist capital and with that section of native capital which was subordinated to foreign capital and served as its agent.

In Western Europe, besides the peasantry, very great importance as allies of the working class attaches to the non-proletarian toiling masses as well as to various sections of the petty bourgeoisie. Thus, for example, in formulating the principles of the Italian road to socialism, the last Congress of the Italian Communist Party based itself upon the working class alliance with the middle strata of town and countryside; hence, upon an alliance with the non-proletarian toilers, with the petty bourgeoisie as well as with the peasantry.

The question of allies assumes different forms depending not only on conditions in different countries but on the phases of capitalist development in given countries. It can, however, be stated in general, that the working class-peasant alliance, and often the more extended alliance with the petty bourgeoisie and even with certain sections of the bourgeoisie, appears everywhere, in all countries, in the struggle for power and in the period of struggle to maintain power

What are the further special tasks that will ensure the victory

of the proletarian revolution? In the first place there exists *the necessity to carry out such an economic change as will eliminate the economic bases of the former exploiting classes.* This is a task in the realm of political economy but it has a basic political significance. Let us remember that often social democratic parties assumed power in Europe. As a rule, they confronted insurmountable difficulties. Their assuming power was not connected with depriving the exploiting classes of their economic bases. Sooner or later, however, they faced the alternative — either of revolutionary steps to deprive big capital of the economic bases of its exploiting power, or to capitulate to it.

In France not only social democratic but also left-bourgeois governments collapsed over this question. No sooner did a left progressive government assume power than there commenced a flight of capital and a fall of the franc; and in course of months the government was compelled to resign.

There are hence two possible roads for social-democratic governments. One is a social democratic government directed against the bourgeoisie, which dispossesses big capital of its economic bases. Up to now no social democratic government has chosen this road. The second road is that of agreement with the bourgeoisie and guarantees that there will be no basic change in the social structure — i.e., the road of retreat from socialist aims. This simply means continuation of the capitalist administration of society, without disturbing its foundations, being satisfied with social reforms which do not disturb the foundations of the capitalist structure. This was furthermore convenient for the bourgeoisie which could shift to social democratic governments responsibility for the economic situation in the country. This road, taken by German social democracy, made possible Hitler's victory, because Hitler shifted to social democracy responsibility for the crisis and for all internal contradictions of the capitalist economy in Germany.

It clearly follows that every government which truly desires to liquidate the old and to build the new structure must deprive the former exploiting classes of their economic foundations. This means that it is necessary to eliminate by means of agrarian reform the economic bases of countries in which feudal elements still exist. It is necessary to expropriate big capitalist property — big banks, large scale industry, and means of transportation. Big capitalist property must be taken over by the revolutionary state.

State appropriation of the banks, industry and transport is the instrument which makes possible the further development of the national economy.

This is the first step of every effective revolution. A revolution which does not take this step is doomed to failure. Having deprived the former exploiting classes of their economic bases, the new state power, which emerged from the socialist revolution, must undertake a series of measures which satisfy the aspirations of the working class allies. It must at the same time neutralise those middle strata which do not support the socialist revolution. Neutralisation of middle strata is of great significance since they are in a state of conflict with big monopoly capital as well as with feudal elements, which the revolution eliminates. This may be decisive for isolating the leading core of the former exploiting classes and to weakening the chances of counter-revolution.

The most important class ally of the proletariat is the peasantry. Hence we see that besides expropriating big capital, the big banks, industry and transport — in which private capital is engaged — the socialist revolution always introduces agrarian reform satisfying the needs of the small and middle peasantry and takes certain steps to neutralise the well-to-do capitalist farmers.

It is undeniable that agrarian reform satisfies the needs of the poor and middle peasantry and is able also to neutralise the large-scale farmers. The Chinese Revolution gained the support of the small and middle peasants, neutralised the well-to-do peasants — which was at any rate small — and no less important, neutralised also the national bourgeoisie who were won over to the side of the revolution. Confronted with a choice of what to them were two evils — the socialist revolution or a return of imperialism, — the greater part of the national bourgeoisie came to the conclusion that the lesser evil is the gradual change effected by the socialist revolution, and became neutral. As regards the Russian Revolution, there the ally of the working class was the small and middle peasantry. The *kulaks* were neutral only at the beginning. The whole bourgeoisie together with the large landed-estate owners found themselves in the camp of the revolution's enemies.

It follows from the above that the question of the allies of the working class expresses itself differently in different countries. The working class will win an especially broad circle of allies if the social revolution is connected with national liberation. The

working class can win the support not only of the peasantry and petty bourgeoisie in general when it is also the leader and guide of the struggle for national liberation. That undoubtedly was partially the situation in Poland and other European people's democracies in 1944-45. Such too was the situation in China and the other Asian countries of people's democracy.

The national liberation struggle provided possibilities to create a circle of working class allies, relatively broader than that developed in the course of the Russian Revolution, where the element of the national liberation struggle did not exist. The Russian Revolution was accomplished under conditions of national collapse sustained in the war and this narrowed the circle of working class allies only to the peasantry.

While removing the economic bases of the former exploiting classes, while satisfying the aspirations of its allies and neutralising certain strata, the socialist revolution must also consolidate the economic position of the working class. This process is accomplished simultaneously with the socialisation of large-scale industry, of the banks, means of transportation, etc. This creates a new foundation for the direction and control over the national economy by the working class and its state. Fulfilment of the aspirations of the working class and recognition of its leading role are accomplished even while a certain capitalist sector still remains.

If we take the history of the Russian Revolution as an example, then we find that the programme of the Bolshevik Party demanded only socialisation of great industry and the banks at the inception of the revolution. Then it advanced the slogan of workers control over the rest of capitalist production, thus strengthening the role of the working class in the remaining capitalist sectors. This slogan turned out to be unrealistic due to the outbreak of civil war, in which the whole capitalist class and the greater part of the bourgeois intelligentsia stood on the side of counter-revolution. At that time it was necessary to proceed with the immediate socialisation of all capitalist enterprises not as a result of the original programme of the new Soviet power, but as a requirement of the civil war.

In China — where development was peaceful (after the triumph of the revolution) — there ensued at once the strengthening of the working class position in private capitalist enterprises, control

of which was one of the tasks of the trade unions jointly with the state. This played an important role in the gradual transformation of the capitalist sector into a socialist one. Although fairly well advanced this process is not complete yet.

In Poland a large part of industrial enterprises was simply without a master immediately after the war. Temporary state direction was established in these enterprises. Actually, the socialisation of a large part of industry was formally legal, enacted by decree of the National People's Council. Many enterprises were taken over by crews of workers who rebuilt and commissioned them under exceptionally difficult conditions.

There is no doubt that the consolidation of the economic position of the working class is one of the most truly important first steps which the revolution and socialist power must undertake. This is an indispensable condition for securing working class leadership in the process of social reconstruction.

Only the working class can give a socialist direction to the process of development, although under the dictatorship of the proletariat it rules together with its allies — and neutralises certain classes and strata. And this is so because the remaining classes and strata, regardless what position they may take in the struggle against monopoly capital, do not pursue socialist aims. They set themselves only anti-feudal, anti-monopoly and anti-imperialist goals. Hence, in the nature of things, leadership must be assumed by the working class — the class which is organised in a revolutionary party and bases itself on Marxist-Leninist principles. This is an indispensable prerequisite for the revolutionary changes taking a socialist direction.

We are dealing here with the first steps in the realm of economic policy which arise directly from the socialist revolution and result from the political consequences of the new situation. These steps must be applied immediately after the revolution with the aim of eliminating the economic bases of the former ruling classes and to consolidate the positions of the new state power.

But these steps do not by themselves necessarily lead to socialism.

We have already referred to the necessity of satisfying the aspirations of the working class allies as well as of neutralising certain classes or middle strata. But agrarian reform, liberation of the non-proletarian toilers and petty bourgeoisie from monopoly capitalist exploitation, as well as certain acts which neutralise other

classes (in China the national bourgeoisie, for example) do no yet in themselves bear a socialist character.

Socialist elements only appear in measures which consolidate and raise the economic position of the working class. Such steps as workers' control in work establishments — in the first period after the October Revolution — the renovation of factories taken over by workers' crews — as took place in Poland immediately after liberation — undoubtedly bear a clear socialist stamp. Often these steps do not as yet fully eliminate capitalist production relations, but increasing the role of the working class, transfering to it supervision over the production processes and the control instituted by the new state — which issues from the loins of the working class — lead to true socialist elements. After that it is necessary to build new socialist production relations in the true sense of the term.

Creation of a socialist sector in the national economy is the first great positive task of the period of socialist construction. This task appears practically the day after the revolution but its full expression is crystallised only after consolidation of the new political power. The process of consolidating power requires a whole series of steps which prepare the ground for socialist construction. This ground is prepared particularly by the expropriation of the banks and large-scale industry (in Poland it embraced also medium indutry, and in Russia, owing to the civil war, the whole of indusstry), transport and power; this provided the new state with large stocks of the principal means of production and made possible the organisation and financing of the national economy.

The primary task is hence the organised utilisation of these means. To the gains from expropriation accrue also the means inherited from the capitalist state. For, certain forms of state-owned means of production already exist under capitalism, and the new state appropriates these. This applies to railways (for example, to railways in Russia and Poland). We did not have to socialise the railways for they were already state property.

The more developed is state monopoly capitalism, the greater are the means of the capitalist state inherited by the new socialist state. Weakly-developed countries face a similar situation. In such countries the development of a series of branches of the national economy is possible only under state capitalist forms. There, the new power takes over such branches, giving them a new social

content, making them serve the new, the socialist, and not capitalist society.

There appears besides, a whole stock of means of production and transportation, as well as a developed financial establishment at the disposal of the new state. It is necessary to organise all this in the socialist national economic sector. This is a task of primary importance if the socialist sector is to establish a foundation for economic expansion and further social and economic transformation.

Organisation of the socialist sector is accomplished on the basis of expropriating large capitalist property in finance, industry and transportation and its socialisation. To this is added the fruits of socialisation gained by inheritance from the capitalist structure. We must add that true nationalisation can only be achieved by a socialist state. Nationalisation of the means of production under socialism is related to the direct participation of the workers in management. That is the true index of socialisation of the means of production. This participation was weakened owing to certain bureaucratic distortions in the recent period. However, it is worth recalling that workers' direct participation in the control and management of the work establishments was considered a matter of course in the October Revolution. It suffices only to read the works of Lenin and the history of the revolution to be convinced of this. This principle was somehow lost sight of only later owing to a great extent to the weakness of the working class and entrance into its ranks of masses of peasants and petty bourgeoisie. The state apparatus replaced direct working class control.[3]

The solution which we accept — and which is to be found even in pre-World War I Marxist literature — is the socialisation of the basic means of production and their transformation into the common property of the whole people. Socialisation is carried out in such a manner that the means of production are managed by

[3] There is, however, a difference between this stand on socialisation and that of anarcho-syndicalism. This problem also appeared at a certain time in the Soviet Union. Thus there arose the 'Workers' Opposition', so called, which advocated transfer of the factories to workers collectives. In its extremist opposition to growing bureaucracy, anarcho-syndicalism maintained that the factories are the property of the people and they should have complete autonomy. Instead of the means of production being the property of society as a whole, they should be the property of a group. This would eliminate the possibilities for general planning and for centralised direction of the national economy.

the workers — not as the owners but as trustees of the property of society as a whole. Socialisation of the means of production is the condition for the full development of the productive forces and for the democratic direction of this development of the working masses. Such is the meaning of socialisation under socialism. Without this condition, without socialisation of the means of production, there are no possibilities for social progress in all spheres, including culture.

Under certain conditions we may also conceive of a great role for the municipal sector in the creation of the socialist economic sector. This can be the case in countries where a whole series of public utilities already constituted municipal property under capitalism.

Owing to the emergence of the sector socialised by the socialist state, the new power of the dictatorship of the proletariat requires key positions — as defined in the Soviet Union following the October Revolution — or control of the commanding heights of the national economy, from which they can exert influence upon the entire economy, including the part outside the socialist sector.

The second step on the road to socialist construction is the adjustment of the socialist and capitalist economic sectors, i.e., the small and medium capitalist economies. This step has the objective of assuring the leading role of the new socialist state in relation to the capitalist sector. It is necessary so that the capitalist sector may not be able to utilise its private capitalist property in means of production to oppose the policies of the new state power. Serving this objective are different forms of state control over the capitalist sector as well as the direct workers control and the decisive weight of the newly established socialist sector — which must be great enough to enable it to direct the whole economy and to react upon the capitalist sector.

The organisation of the socialist sector — the first main task of socialist construction — was accomplished on a more or less identical basis in different countries (disregarding differing organisational forms). While control over the capitalist sector, its adjustment to the socialist economy and its socialist transformation — the second task — was carried out differently in different countries, depending rather on prevailing political situations than on economic causes.

The Russian Revolution attempted at first to place the capitalist

sector under state control to strengthen workers' control as well as to exert an influence upon the capitalist sector with the aid of the key positions commanded by the socialist sector. But, as indicated earlier, the civil war demanded the complete liquidation of the capitalist sector. All that Lenin wrote about state capitalist forms of development, regarding the integration of the capitalist sector with the socialist economy establishing a peaceful process of socialist construction, was exploded by the civil war. In the NEP period ensued the building of small capitalist enterprises in industry as well as in trade. Socialist industrialisation was connected not with the integration and transformation of the capitalist sector but with its elimination. In the period of the first Five Year Plan a base was obtained for the conquest of the capitalist sector by the socialist economy. It seems that the basis for this step had a political character. The entire capitalist sector appeared as an enemy of the new power and there were no possibilities for co-operating with it and gradually linking it with the socialist economy.

In China the capitalist sector followed a different path. First it submitted to state control ; the state actually became one of the customers and suppliers of the capitalist sector. This was called there state capitalism. The next stage was acceptance of the principle of the state sharing profits with the capitalist sector. The basis of this partnership was the state grant of credits for the development of the capitalist-owned economy. A further stage was the replacement of state profit sharing by a fixed rate of interest on the capital of the capitalist sector. This constitutes a fundamental change. From a capitalist receiving a portion of the profits the former owner was changed into a rentier who is generally engaged in the direction of the enterprise (either as director or assistant director), who receives only interest on his capital. Such is more or less the present status of the capitalist sector in China. The further perspective is for the former owner being changed into a paid manager of a socialised enterprise. He will for a certain time continue to receive interest on his capital; in the course of time, however, his rate of interest will be lowered and will gradually be entirely eliminated. This process is defined in China as the socialist transformation of the capitalist sector.

As regards Poland and other European people's democracies, it is necessary to distinguish two periods. Properly speaking, the first period based itself on very similar conceptions to those being

applied today in China. They involved the regulation and integration of the capitalist sector and its gradual transformation into a socialist economy. This was a policy of neutralising and even winning over a section of the bourgeoisie. This was made possible in Poland by the link between the acquisition of power by the working class and the activity by the national liberation movement to expel the German occupant. The possibility existed for a broad nation-wide appeal for support of the new people's power. This policy was applied approximately until 1949. Then came a radical change in the direction of accepting the Soviet formula regarding the elimination of the capitalist sector which in our case was extended to a great extent to include even the petty commodity handicraft sector.

What determined that change? It was the consequence of the sharpened tensions in the international political situation, i.e., the cold war, and growth of the possibilities of a hot war. This brought in its wake a whole series of consequences, for example, revision of the Six Year Plan and building up a defence industry. It also had its effects in relation to the capitalist sector. Apprehension arose that in case of the further sharpening of the situation, the capitalist sector will become an enemy sector blocking the economic steps of the people's power and that it is hence impossible to leave a part of the national economy in the hands of enemies of socialism.

A second cause (related to the first) was the mechanical imitation of the Soviet model. But in Russia, determination of the fate of the capitalist sector in favour of its elimination took place under entirely different conditions. As we have indicated, there the whole bourgeoisie was on the side of the enemy during the Civil War, owing to which no other possibility existed in that period.

A further task of the socialist state is the integration into the socialist economy of petty commodity production, first of all agricultural and handicraft, followed by their socialist transformation. The classical Marxists, and first of all Engels, indicated this road which Lenin further developed. It involved the socialisation of petty commodity production by means of turning them into cooperatives. Engels wrote about this in dealing with the peasant question in France and Germany. Lenin's great cooperatives plan, realised later in the Soviet Union, based itself on these very conceptions.

Certainly, neither expropriation nor elimination can operate as a principle in relation to petty commodity economy. For, it is the economy of the allies of the working class. Cooperatives make

possible the transformation of private property into socialist property in the sphere of petty commodity economy — it is the form of its transformation.

But resulting from this are significant consequences of which the classical Marxists did not foresee the whole range, and which fully revealed themselves only in the Soviet Union. This pertains to the fact that besides nationalised state, socialist, property, there is a new form of socialist property, namely, cooperative-group-property. This is property in means of production of a socialist character. It is not, however, the property of society as a whole but has a narrower character.

Thus, in the process of socialist construction, there appears cooperative property besides socialist, state property. The cooperatives took over the heritage of the old cooperatives which arose in the capitalist era. These were workers' cooperatives which protected them in a limited degree from capitalist exploitation. Often there were also peasant and petty bourgeois cooperatives and at times even of small capitalists. They were long ago assimilated in the birth process of new socialist cooperatives as new forms of socialist property in the means of production.

Owing to all these transformations it becomes possible to introduce a planned economy — which is the true ingredient of socialist construction. The foundation of a planned economy is the socialist, the state sector, because it holds the key position in the national economy which makes it possible to plan and to exert direct or indirect influence upon the whole national economy. With this is joined state control over the capitalist sector and varied means of state influence over the petty commodity sector. The development of cooperatives strengthen the possibilities for economic planning, particularly in agriculture, trade, etc.

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It so happened — and not accidentally — that the first socialist governments, the first socialist revolutions, emerged not in the most developed countries, but in backward countries where capitalism earlier manifested its incapacity to further expand the productive power of society. Hence the additional problems of development, the additional tasks which confront backward countries after the conquest of political power by the working class. From this resulted the weakness of the sector socialised by the revolution— the base of the socialist sector — while capitalism was likewise weak in those

countries. Socialisation of big capital and the banks — and thus, as in Russia, the whole of industry — created but a small socialist islet in a great peasant-petty-bourgeois and partly also small-capitalist sea. The position of the newly established socialist sector was difficult and exerting its influence upon economic life as a whole was not easy.

Moreover, the revolution was accomplished under conditions of the weak growth of productive power, since capitalism did not accomplish its historic task of expanding production in these countries. When Marx and Engels wrote about the socialist revolution, when the labour movement in the nineteenth and early twentieth century aspired to that revolution, it was assumed that it would first appear in the countries of the most developed capitalism, in which the task of developing the productive power had already been accomplished. The task of the revolution was thought of consisting of the achievement social change by removing the capitalist barriers, which at a certain stage of capitalist development hamper the further growth of the productive forces. The situation was, however, different in Russia and the other countries when the socialist revolution took place. It placed before the revolution tasks which capitalism did not fulfill. It was necessary in those countries to first achieve the agrarian anti-feudal revolution, as a component part of the proletarian revolution. The anti-feudal agrarian revolution resulted from worker-peasant alliance and satisfied the aspirations of the peasant masses; but it was also an economic necessity. It was necessary to remove the fetters created by a system even older than capitalism, which hampered the development of capitalism itself.

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Such was the meaning of the agrarian revolution. Two fundamental problems appeared after the agrarian revolution and simultaneously with the creation of a socialist sector by expropriating big and medium capital — *the problems of socialist industrialisation and that of modernising agriculture.*

Capitalism accomplished the industrialisation of the old capitalist countries. The Germans, English or French, for example, were not confronted with the above tasks. In Russia, however, they constituted the leading tasks of the new power. Thus the first victorious socialist revolution confronted tasks which were not formerly delineated as the historical tasks of socialism, but as those of

capitalism. Among these tasks appeared the problem of modernising agriculture, which was unusually backward, and the modernisation of which was a condition for industrialisation. For, it is impossible to achieve industrialisation if agriculture does not provide the necessary increase in commodity production required to feed the non-agricultural population which grows as a result of industrialisation. The expansion of agricultural production for the market is indispensable to industrialisation. However, industrialisation—which equips agriculture with implements and machines, fertilisers, electric power, etc., is, on the other hand, a condition for increasing agricultural production.

Industrialisation and the modernisation of agriculture are closely connected. These are new, specific tasks which were faced by the Soviet Union, and which confront all underdeveloped countries. The chief difficulty in this sector is finding the necessary means. For industrialisation and the modernisation of agriculture require accumulation.

There are three sources of accumulation: 1) profits from the socialist sector—the more this sector expands, the greater the accumulated means for further industrialisation. The expropriation of big capital and the banks, the taking over of the old state capitalist inheritance created the first bases of the socialist sector, the profits of which could serve for accumulation. Each new socialist enterprise facilitates the building of more new ones. 2) Taxing the peasants in the form of obligatory deliveries, among other means. Having obtained land owing to the agrarian reform, the peasants have to contribute to industrialisation. 3) Various forms of levies attracting means from the people, through taxes, state loans, etc.

Such are the three main sources of socialist accumulation constituting the main foundation of socialist industrialisation as well as of the modernisation of agriculture by means of mechanisation, electrification, etc.

A whole series of special questions arose in relation to this. Among other things, it was shown in the Soviet Union that the process of socialist industrialisation requires the acceleration of the socialist reconstruction of agriculture. The speed of the industrialisation process requires the rapid expansion of agricultural production for the market. Under these conditions, the most important task is to attain a greater increase of market production

than a general rise in agricultural production. It is decisive to obtain a large amount of agricultural produce to feed the working class. Insofar as the USSR is concerned, the rapid collectivisation of agriculture also improved the agricultural share of accumulation. Owing to the collectivisation of agriculture it was easier in such a vast country to collect the obligatory deliveries than it would have been possible with scattered individual farming.

The role of agricultural collectivisation in socialist industrialisation is even more sharply expressed in China, where people's communes have arisen and are developing. The smaller the economic role of industry in the take-off period, the more must accumulation depend upon agriculture, and the greater the importance of agricultural collectivisation for socialist industrialisation. The more industry is developed, the more it serves as the main source of socialist industrialisation, the smaller is the significance of collectivisation.

The policy of socialist construction in general, and particularly under the conditions of underdeveloped countries which confront additional tasks of socialist industrialisation and the rapid modernisation of agriculture, require a great degree of centralisation of leadership and management of the national economy. Such centralisation is made necessary first of all by the nature of the revolutionary transformations, such as the expropriation of big and medium capital, control of the remaining capitalist sector, and the struggle (which always goes on) to keep the leadership over the petty-commodity producing sector in the hands of the socialist state rather than under the influence of the capitalist sector.

Without centralised direction it is not possible to ensure the decisive, leading role of the socialist sector; it is not possible to guarantee that the capitalist sector will not be a source of continuous opposition, that it will not dominate the petty-commodity sector and mobilise it against the socialist sector and the socialist state power. Without centralised leadership it is not possible to achieve socialist industrialisation, which requires the concentration of all resources on decisive, selected investments in spheres which contribute most to the further development of the national economy.

To a smaller or greater extent, socialist countries have gone through, and are going through a phase of centralised leadership. But in a later period there appeared in many socialist countries numerous distortions—on that background—expressed in the bureau-

cratisation of the management of the national economy, in a lack of leadership-elasticity and restriction of the further development of the productive forces. As a result of these distortions, a certain part of the state and economic apparatus appeared as a state within a state, adopting its own policies. We all know about these tendencies in Poland and the USSR, which appeared—among other manifestations—in the form, for example, of the security apparatus placing itself above the Party and the State.

Under these conditions, there arose new problems which created the necessity for a retreat from excessive centralisation, for assuring democratic control in the state, Party, and economic apparatus; and the need for the direct workers self-government—in the form of Workers' Councils or in other forms—for the autonomy of cooperatives, of agricultural circles; as well as for the activisation of the trade unions in the workshops as organs of social control. There arose too the need for working out new, less centralised forms of leadership and management of the national economy, resting to a greater extent on the workers, localities, trades and enterprises' initiative in the entire economy. It took a different course in different countries, but the current of change in the forms of direction and management of the national economies and the democratisation of these processes is flowing in all of them: in the USSR, in Poland, in Czechoslovakia and other people's democracies. It has also appeared in China.

New forms of organisation of socialist economy have begun to take shape. The organisational forms of the socialist economy are not established once and for all. Established once and for all is the social content of the socialist economy, namely, the social ownership of the basic means of production, and the socialist management with the aim of satisfying the needs of society, and not to ensure profits for some individual class or sections of society. Organisational forms change, however. They vary with different stages of development of the socialist economy, and they differ in individual countries, depending upon historical conditions. It may be stated in a word that socialist production relations assume ever new organisational forms simultaneously with the growth of the productive forces of socialist society.

The superstructure of the administration of the socialist economy and direction of its development also changes ever more. The disintegration of the inelastic, excessively centralised administrative

system commences at a certain stage of the development of the forces of production. The departure from the former administrative methods is then also connected with the growth of the productive forces. The more developed the economy, the more difficult it is to administer it in a centralised manner. The more initiative is cramped, the greater are the negative features of centralism, as compared to its positive side.

The growth of productive power and the number and variety of enterprises are the factors which impose reform of the pattern. What is involved here is of course the adaptation of organisational forms to the growth of productive forces. As a live structure, socialism continuously develops, changes and adjusts itself to new circumstances. There is a process of adaptation of the organisation of socialist production relations, and even more, of the organisation and administrative forms of the economic base, to the level of the productive forces.

These changes attest to the crystallisation and maturing of socialism as a social system. The forms of a high degree of centralisation of leadership and administration belonged to the previous period. They developed out of the requirements of the previous period, and were characterised rather by the application of non-economic methods of compulsion as well as political persuasion and propaganda, than by normally functioning economic law. This is a typical characteristic of the previous period, in which the new socialist economy does not grow spontaneously out of capitalism, but is the conscious, planned creation of the socialist state.

The political revolution leads to the transformation of the social and economic structure in a socialist state; the dictatorship of the proletariat is the motive power which effects the transformation of the socio-economic structure. This means that the transformation is accomplished to a great extent by means of non-economic compulsions, primarily through the expropriation of the capitalists, agrarian reform, etc. But the socialist state at the same time organises, regulates, appeals to the consciousness of the working class and employs a whole range of non-economic, legal and administrative as well as propaganda means. These are dominant and must remain so in the period of transition. But these means acquire particular importance for economically underdeveloped countrie which are confronted with the tasks of socialist industrialisation and the modernisation of agriculture.

The usefulness of these methods diminishes in importance, however, in measure with the maturing of the new socialist society. They may even become a break upon the rational character of the economy. This is why changes are effected which are today visible in the whole socialist world. New methods of leadership and administration of the socialist economy are being sought, new 'patterns', resting on the internal forces of the socialist economy rather than on the basis of non-economic means of compulsion. This process naturally appears differently in individual countries of different stages of development, but the direction is basically the same everywhere. The more mature the new socialist structure, the less does it need the aid of non-economic state methods of compulsion, the more it stands 'on its own feet', i.e., the more it relies on the operation of economic law.

It may be asserted that *when non-economic compulsion as a means of leadership and administration of the socialist economy becomes unnecessary when the economy is 'ready' and relies on the operation of its own economic laws—which are scientifically employed by the leadership of the national economy for the realisation of consciously fixed social goals —then the transition period is ended.* The end of the transition period is hence the conclusion of the period of socialist construction during which the revolutionary state of the proletarian dictatorship, by means of non-economic compulsion, liquidates the old production relations, shapes the socialist production relations, and organises the economy on the basis of these relations.

It is difficult to precisely define when that will come to pass. For, it is a gradual and often a long-lasting process. It can only be stated that it requires the consolidation and extension of the socialist ownership of the basic means of production—at least to the degree necessary for the operation of the economic laws resulting from socialist production relations—and if there still exist non-socialist production relations, these play only a peripheral role; and their further absorption by the socialist economy may be accomplished by purely economic means.

This raises the question of the fate of the petty-commodity producing sector in the process of shaping the socialist economy.

In the Soviet Union the process of the socialist transformation of the petty-commodity sector took place with exceptional rapidity. The capitalist sector was liquidated during the course of the Civil War, then followed rapid mass collectivisation. The NEP was

weak and the elimination of the capitalist elements did not confront great difficulties.

It is much more difficult to solve this problem in Poland where we have not as yet finished with the question of agriculture—from the viewpoint of building socialism. The specific conditions of the USSR required the rapid liquidation of every non-socialist disposition, even the petty-commodity sector. This necessity arose from both economic and political factors

In conditions other than that prevailed in the USSR, the need for a rapid transformation of the petty-commodity economy into a socialist one does not exist. In conditions where the socialist sector is stronger, where it is dominant in the national economy from the beginning, there is no need for such haste. The greater weight of industry in the economy from the outset results in industry being adequate for the greater part of accumulation. Industrialisation to a great extent relies from the beginning on the internal accumulation of rapidly developing socialist industry while agriculture is gradually drawn into the socialist economic orbit as a result of the progress of industrialisation. The dominant position of the socialist sector in the national economy from the beginning results in weakening the danger that the petty-commodity economy will become the point of support for the enemies' social and political strength. In this situation a deciding role may be played by the consideration not to check the normal production process and not to weaken the alliance of the working class with peasantry and petty-bourgeoisie generally. In this consists the basic difference between the situation in the USSR in the period of revolution and that of Poland.

This question may be disposed differently in other countries. Comrade Togliatti stated at the last congress of the Italian Communist Party that it is difficult to foresee when petty-commodity production will cease to exist. For, if the Italian road to socialism depends on the alliance with the middle strata of town and country, if the people's power will not apply a policy of forcing them into a transition to the socialist mode of production, then it is an open question whether petty producers, small handicraftsmen, or the still remaining private traders, will want to form cooperatives or to rather remain private enterprisers.

It may be asked if the petty-commodity sector will remain a permanent component of socialist economy , as it was under

capitalism. That is hardly probable. The petty-commodity system prevailed under capitalism because it constituted a defence and a place of refuge from proletarianisation. This motive does not exist under socialism. It will pay less and less to persist on the low productivity of petty commodity production as the socialist economy grows, and ever greater will be the profitability of connecting with the socialist economy—through cooperatives, for example. The earlier will this develop the stronger will be the development of the productive forces.

The socialist state possesses decisive means for directing the economy; and if elements of petty commodity production remain over an extended period, they do not harm the building of socialism. Decisive to the economic development of the country is the great socialist sector which is dominant in the national economy. Sooner or later peasant and other petty bourgeois elements reach the conclusion that it is in their interests to connect up with the socialist economy. When that will happen is hard to foresee.

In certain cases—such as occurred in the Soviet Union—it is possible to fix certain dates for carrying out the massive collectivisation of agriculture, in relation to the results of socialist industrialisation. In other cases, such for example, as in the perspective for Italy, this transition will be gradual and very slow. The essential fact is that for a certain period the socialist sector often embraces the entire economy, while the remnants of petty commodity production are reduced to the role of survivals which do not play any important social, political or economic role.

Socialist economy gradually matures in the following manner: the transition period (the period of constructing socialism) gradually ends in the measure that it ceases to rely on non-economic means of compulsion, and rests more and more upon the operation of its own economic laws, as well as in the extent to which the still existing important non-socialist production relations atrophy.

4

SOME PROBLEMS OF SOCIALIST INDUSTRIALISATION

Jerzy Rutkowski

ECONOMIC DEVELOPMENT AND INDUSTRIALISATION were considered as synonymous already at the opening of our century when the difference between the metropolitan countries and the economic backwardness of the largest part of the world grew enormously. This view underwent a basic change in the West after the Second World War, although a vast gulf was already visible between the most developed countries and those of delayed development in relation to their economic levels and social structures.

This gulf, resulting—among other things—from differences in economic potential, has by no means been narrowed since. As a consequence of this, the desire to expand their national economies and the knowledge that industrialisation was the basic method for assuring the economic independence of the underdeveloped countries, and for improving their position on the world market, grew stronger after the Second World War. These tendencies probably matured also under the influence of the path previously traversed by the 'rich' capitalist countries; they were enormously strengthened by the effects of the industrial development of the USSR, and the post-war transformations in the people's democracies.

Precisely in this situation the point of view was advanced in the capital-exporting countries, according to which the most desirable direction of development of underdeveloped countries was the building up of agriculture and the production of raw materials. This point of view was contrary to the logic of economic growth and in conflict with the aspirations of the peoples of these countries. The following are the most frequently encountered motivations of this type of viewpoint: The industrialisation of the capitalist countries in the nineteenth century was made possible by a particularly propitious constellation of events which no longer exists in

the twentieth century. Therefore, to follow the example of the present-day industrialised capitalist countries is to miss the target. The development of raw materials production corresponds much more to the conditions of underdeveloped countries. These countries are characterised by a lack of capital in relation to labour; hence investments should be directed to handicrafts and agriculture which have a relatively low capital formation. It is suggested at the same time that the possibility of placing additional raw materials on the world market is always assured, regardless of the condition of the foreign exchange positions of industrialised countries (which must grow steadily worse, according to the thesis of Keynes, Colin Clarke and others), due to growing shortages of primary raw materials. Because of that, it was said, raw material producing countries can count on an extended period of rising prices. Examples have been cited of countries like Iran, Iraq or Saudi Arabia, well stocked with oil, who with the aid of foreign capital rapidly developed their raw material bases and which proved profitable for the living standards of their people.

At the same time, actual difficulties confronting industrialisation have been given an absolute character. These relate—besides the lack of capital—to the character of the labour force, the improper distribution of raw material bases, the danger of dislocating the balance of payments equilibrium, etc. These difficulties are brought forward as if they substantiate not only the necessity of an inflow of capital from the outside, but also giving preference to the development of agriculture.

Without entering into polemics with the above views, it may nevertheless be stated that the demand for raw materials and means of subsistence rises more slowly than for manufactured articles. Moreover, the demand by industrialised countries for raw materials and agricultural produce declines disproportionately more rapidly in periods of crisis than the fall in the national income. Official data (e.g., United Nations Studies)[1] show a constant worsening of the exchange relations between producers of raw materials and means of consumption and those who produce finished manufactured products. In the course of 70 years—from 1880 to 1949—these relations worsened by 37 per cent to the disadvantage of the raw material producing countries.

[1] *Post-war Price Relations in Trade Between Underdeveloped and Industrialised Countries* (New York, 1949).

The majority of raw material producing countries are monocultural. This strengthens the dependence of these countries on price fluctuations on the world market, and facilitates their subjugation to the interests of monopoly capital. From these main considerations stems the strong pressure in the contemporary imperialist countries to ossify the artificial state of affairs as if they resulted from the natural situation obtaining in underdeveloped countries. The justification of monoculture, or of a very narrow agricultural raw materials specialisation is so old, that it occasioned Karl Marx to declare:

> 'You believe perhaps, gentlemen, that the production of coffee and sugar is the natural destiny of the West Indies. Two centuries ago, nature, which does not trouble herself about commerce, had planted neither sugar-cane nor coffee trees there.'[2]

Based upon the modern conception of the 'agrarian revolution'—which is, in fact, rather a programme of agricultural counter-revolution for underdeveloped countries—Canada is often cited as an example of a country which is indebted for its wealth to the development of raw materials production. It is maintained that the late arrival of industrialisation in that country was a natural consequence of the existence of strong raw material bases. Therefore, the sequence of the developmental stages should determine the maturity of the economy for industrialisation. One meets with in bourgeois literature a projection of stages—from virtually closed economies to the phase of intensive development—the orderly transition through, which is fallaciously claimed to be indispensable also for underdeveloped countries in the present situation.

The scheme of these stages reflects to a certain extent the historical development of economic progress which gradually cleared the road of certain capitalist countries to their present levels. This, however, does not confirm the validity of the conception of progressive stages. Under conditions when world technique has reached the current high level, there is no longer any reason for underdeveloped countries to repeat all the progressive stages of development. There are, on the contrary, more important factors which enable the industrialisation of underdeveloped countries by omitting certain stages. These are ingrained in the structural content. It often seems that the problem of the impulse to rapid industrial development in

[2] Karl Marx, *The Poverty of Philosophy* (New York, 1955), p.207.

underdeveloped countries leads to the discovery of remedies for the lack of capital, and to the utilisation of all possible sources of accumulation for development purposes. M. Dobb has correctly stressed that in the final analysis, this is not so much a financial as a problem of economic organisation. Developments in the post-war world show that inadequately developed countries are able to undertake industrialisation programmes (as a rule on the basis of partial nationalisation) to the extent that their leaders rely upon a broad anti-feudal, anti-imperialist front. However, only the socialist revolution creates the best conditions for, and makes possible, the most rapid industrialisation.

Socialist industrialisation has to solve the majority of problems which confront every underdeveloped economy, and which are decisive for entering the road of rapidly developing the productive forces. In that case, these problems are as common as is economic underdevelopment. As we saw, this induced a series of common rules. However, besides the basically different social-economic situation, in which socialist industrialisation takes place, there is a particularly important characteristic which decisively distinguishes socialist from non-socialist industrialisation, although it too proceeds in highly diverse conditions.

The new type of social production relations is the basis of the specific characteristics of socialist industrialisation and the main source of its superiority. They especially assure the dominant role of the socialist state in the economy, and the possibility of the planned disposition of the material means and labour reserves on a national economic scale for the continuous improvement of the people's material conditions. This does not mean that the bases of the specific characteristics of socialist industrialisation automatically eliminate the numerous obstacles and difficulties which emerge in the process. They are not in a position to set aside the objectively operating laws of all great technical progress. They, however, provide society with great opportunities for overcoming these obstacles at an incomparably lower cost, and without the sacrifice of entire races and generations who constituted the foundation for the development of the productive forces under the conditions of primitive capitalist accumulation. One of the essential conditions for utilising these opportunities is the proper—if it is possible to put it that way—solution (adapted to concrete conditions) of the mutual problems relating to industry and agriculture in the industrialisation period.

The central problem of countries which inherited a medium level of capitalist development (such as Poland) is the mutual relations between industry and agriculture in the period of industrialisation. This problem is decisive to the existence of, or lack of equilibrium in the entire economy. Economic equilibrium constantly worsens, particularly in the first period of socialist industrialisation. The difference in the social-economic structures of industry and agriculture exerts a not inconsiderable influence on this situation. Industry is already socialist and develops on its own socio-economic bases. While agriculture remains overwhelmingly non-socialist, of a petty-commodity producing character.[3]

This makes difficult the direct intervention of the socialist state in the sphere of agricultural raw materials and food production with the objective of rapidly increasing their market production, thus complicating the tasks of accumulation for the needs of industrial development. The methods of developing agriculture followed by the Soviet Union in the early days had precisely the aims of assuring the more rapid growth of production for the market than of general agricultural production, as well as of guaranteeing the share of agriculture in general accumulation. This was primarily accomplished by means of obligatory deliveries.

The thesis regarding the higher productivity of large, specialised collective economies, as compared to small farms, is absolutely correct also in relation to other conditions of socialist countries from the long range perspective—the assumption that there already exist adequate supplies of chemical fertilisers, machinery and agricultural equipment. Increased demand for agricultural produce is already evident in the first stage of industrialisation when the technical base for increasing agricultural production generally does not exist. If the demand for agricultural products, parti-

[3] The anti-feudal character of the agrarian revolution following the conquest of power by the working class in countries of weakly-developed productive forces, leads to a relatively rapid growth of state agricultural property resulting from the expropriation of large landed-estates. However, the state's share in agricultural economy as a whole, is small in the first period; while the overwhelming weight is on the side of small and medium farming. From the viewpoint of the area possessed and that cultivated, as well as in relation to the absolute volume of agricultural production, the agrarian petty-commodity producing economy basically determined (at least in the first industrialisation period) the supply of agricultural produce. This situation gradually changes under the influence of the development of producers' cooperatives. Along with the state farms, cooperative farms constitute a form of socialist property in agriculture.

cularly by industry, is not adequately satisfied, and the supply of agricultural products—raw materials and food—is not increased, while industry tends to expand, the result can only be growing difficulties. Inadequate agricultural production for the market constitutes a burdensome bottleneck for the whole economy. It may cause the disturbance of the whole industrialisation process (particularly in the first period), and threaten inflation, etc. We shall not discuss here the problem of equilibrating industry and agriculture, under conditions of growth, as the central problem of industrialisation, since they have been examined and explained in our literature[4] rather comprehensively.

We shall, however, call attention to certain specific aspects of this problem. This pertains to the fact that even with the maintenance of equilibrium between industry and agriculture as a whole—which is the postulated situation under conditions of industrialisation—the important problem may become that of balancing the individual circulation between these two divisions. This may be shown on the basis of analysis of the conditions for simple reproduction with the implications of applying also to the conditions of expanded reproduction. A specific aspect of this whole problem is the fact that we have to reckon here simultaneously with the division of economic departments and sectors; and consequently—among other things—with non-uniform possibilities of a planned influence on the circulation structure. This is connected with the total transformation of the socio-economic structure of agriculture in the period of industrialisation.

Karl Marx provided an analysis of economic equilibrium in his well known diagrams. Marx's reproduction diagrams should be applied to all economies, including the socialist. The character of the mutual equilibrium conditions between industry and agriculture in the period of industrialisation may hence be concretised on their basis. Marx divided social production into two great departments: department I, comprising production of the means of production; and department II, embracing production of the means of consumption. The abstract scheme of simple reproduction, which served Marx as the point of departure of his analysis may be presented thus:

[4]See particularly: M. Kalecki, '*Zagadnienie finansowania rozwoju ekonomicznego*' (in 'Problems of the Economic Development of Underdeveloped Countries,' Warsaw, 1958) and M. Dobb, 'Several Problems of Industrialising Agricultural Countries', in the same volume.

Department I $P_1=c_1+v_1+m_1$
Department II $P_2=c_2+v_2+m_2$

$$P=c+v+m$$

(P_1 and P_2 designate the social product correspondingly produced in both departments. He established the sum of the three components $c+v+m$ in each department. Component c signifies the means of production consumed in the production process (per year, for example), v designates the workers' remuneration in that period, and m is the surplus product).

There is no accumulation in the abstract conditions of simple reproduction. The entire net product $v+m$ is consumed, constituting that part of the social product which is not necessary to renew the means of producton. In a state of equilibrium of simple reproduction, the social product produced in department I must hence be equal to the total demand for renewing the means of production in both departments, the so-called c_1+c_2; consequently:

$$c_1+v_1+m_1=c_1+c_2,$$
if $$v_1+m_1=c_2.$$

Proceeding from the demand for means of consumption, we obtain the same equilibrium condition of circulation between the two departments. For, the total social product produced in department II must equal the total demand for means of consumption in both departments:

$$c_2+v_2+m_2=v_1+m_1+v_2+m_2.$$

By simplifying the equation, we get $c_2=v_1+m_1$. The equation $v_1+m_1=c_2$ represents the equilibrium condition of the two departments in the process of simple reproduction.

Let us consider next the circumstance that the social product produced in department I is composed of both the production of means of production for industry (machines, equipment, and electric power for production purposes, chemical fertilisers, etc.), as well as the production of means of production originating in agriculture (agricultural raw materials). Similarly, the social product produced in department II includes the means of consumption produced by industry as well as the means of consumption produced by agriculture (the total natural means of subsistence of the countryside) and the means of consumption produced by agriculture for the market (e.g., eggs, milk, vegetables, fruits, etc.).

In turn, the demand for the products of both departments is represented by industry as well as agriculture.

We assume that the total industrial product in the first period of socialist industrialisation derives from the socialist sector, while the combined agricultural products of both departments come from the petty-commodity producing sector.[5]

Exchange between the two departments of social production hence takes place under the conditions of the existence of two sectors. We designate the production of the socialist sector, corresponding to the industrial production of departments I and II, as SP_1 and SP_2 ; and the agricultural products in departments I and II as the production of the petty-commodity sector by DtP_1 and DtP_2. We can now represent the scheme of simple reproduction in a two sector economy in the form of the following four equations:

$$SP_1 = c_1 + v_1 + m_1$$
$$SP_2 = c_2 + v_2 + m_2$$
$$DtP_1 = c_1 + (v_1 + m_1)$$
$$DtP_2 = c_2 + (v_2 + m_2)\ *$$

Furthermore: department I $= SP_1 + DtP_1$ and department II $= SP_2 + DtP_2$.

By dividing the economy into two departments we have the possibility of recognising circulation not only between them but also between the sectors. It is essential to consider that the means of production produced in the socialist sector of department I remains in that department for the renewal of the consumed means of production, while the rest goes in part for consumption by department II of that sector (equipment, machinery for means of

[5]In this argumentation we have adopted only partly the corresponding actuality of the assumption, namely, that agriculture is entirely of a petty-commodity producing character. We have hence considered neither the socialist nor the capitalist sectors. Making use of the abstract character of that assumption we adopted the above for purposes of simplification. Actually, the socialist sector in agriculture plays an increasingly greater role in the socialist transformation. Only, in the first period of industrialisation, petty-commodity production in agriculture — as we saw above — is decisive in determining the conditions of the agriculture-industry exchange in the reproduction process, and it is at the same time the source of reproduction difficulties in that period. What is involved is precisely the demonstration of the character of these difficulties

*There is no division in the petty-commodity producing sector between remuneration of the labour force, and surplus value, m. The components $v + m$ in parentheses applied in the scheme, should be treated as the joint consumption fund (income in agriculture).

consumption produced by industry). The remainder is allocated to both departments of the petty-commodity sector (agricultural machinery and equipment, chemical fertilisers, etc.). Similarly, the industrial means of consumption produced in the socialist sector of department II are consumed by the workers of that department; while a part goes for consumption by the workers of department I socialist sector and the rest to the petty-commodity sectors of both departments.

The matter is similar with the product produced in both departments of the petty-commodity sector, which, besides the part necessary for their own consumption—in exchange for industrial means of production and consumption obtained from departments I and II of the socialist sector—assigns a corresponding part of agricultural means (of production) and means of consumption of agricultural origin to both departments of the socialist sector. There is, besides, also an exchange within the framework of the petty-commodity sector itself.

We are concerned here with substantiating how the proportions of circulation appear between the departments in consideration of circulation between the sectors.[6]

It is not difficult to show that equilibrium within the economy as a whole may be attained with fulfilling equilibrium conditions at the edges of each of the sectors. For, the equilibrium scheme of simple reproduction in a two sector economy may, for example, assume the following form:

$$\left.\begin{aligned} SP_1 &= 2850c_1 + 775v_1 + 775m_1 = 4400 \\ SP_2 &= 1400c_2 + 475v_2 + 475m_2 = 2350 \end{aligned}\right\} \; 6750$$

$$\left.\begin{aligned} DtP_1 &= 330c_1 + 450\ (v_1 + m_1) = 750 \\ DtP_2 &= 600c_2 + 900\ (v_2 + m_2) + 1500 \end{aligned}\right\} \; \underline{2250}$$

$$9000$$

Our assumptions in the above scheme are probably the nearest approach to reality, for:

a) The social product produced in the entire socialist sector is greater than that produced in the petty-commodity sector

$$SP_1 + SP_2 > DtP_1 + DtP_2$$

[6]The solutions will be expressed in money-value forms although use-values are chiefly involved. Of decisive importance in socialist economy is the real side of reproduction. Because a planned price system is adequate as the source of value of a balanced economy, it occurs that the lack of proper proportions leads to price changes for the purpose of equalising circulation. But the real proportions are decisive.

b) The organic composition of the petty-commodity sector is lower than in the socialist sector ($DtP_1 \frac{c}{v} < SP_1 \frac{c}{v}$ and $DtP_2 \frac{c}{v} < SP_2 \frac{c}{v}$, on the basis that c is in fixed ratio to the constant capital).

c) The product of department I in the socialist sector is greater than that of department II of the same sector — $SP_1 > SP_2$; the organic composition of department I of the socialist sector is also higher than that of department II of the same sector. The volumes of the social product produced in departments I and II of the petty-commodity sector are in inverse proportion since the organic composition is the same in both departments.

It is generally assumed that there is equivalence in the money-value proportions in the exchange between the entire socialist sector and the entire petty-commodity sector as well as between department I and between department II in both sectors. But even with such an 'ideal' assumption, an imbalance may appear in the fragmentary circulation within each of the sectors as between the sectors. The values of machinery, synthetic fertilisers, etc., allocated to agriculture may only in exceptional cases equal the values of agricultural raw materials purchased by socialist industry. The same applies to the exchange of agricultural consumers' articles (milk, eggs, vegetables, fruit, etc.) for means of consumption produced by industry (clothing, articles of cultural use, durable goods, radios, TV's, bicycles, motorcycles, etc.).

This is connected with the assumptions adopted above (of varied organic compositions, differences in the magnitudes of corresponding production values, etc., as well as of variations in the volumes of employment, productivity, wages and incomes).

The thesis presented here may be illustrated by the following scheme of simple reproduction (in a two-sector economy) considering circulation between the departments and sectors:[7]

The sums enclosed in parentheses with Sc_1, Sc_2, Dtc_1, Dtc_2 express the actual coverage of the demand of the two departments in both sectors for means of production. They are derived either from department I of the socialist sector (designated by s_1) or from the first department of the petty-commodity sector (dt_1). The sums enclosed in parentheses with Sv_1, Sm_1, Sv_2, Sm_2 as well as Dt (v_1+m_1) and Dt (v_2+m_2) signify the covered demand for agricultural and industrial means of consumption. The origin of these means of consumption are designated correspondingly by s_2 and dt_2.

$$\left.\begin{aligned} SP_1 &= 2850c_1\ (2650s_1+200\,dt_1)+775v_1\ (700\,dt_2+ \\ &\qquad 75s_2)+775m_1\ (775s_2) \quad = 4000 \\ SP_2 &= 1400c_2\ (1200s_1+200dt_1)+475v_2\ (435dt_2+ \\ &\qquad 40s_2)+475m_2\ (475s_2) = 2350 \end{aligned}\right\} 6750$$

$$\left.\begin{aligned} DtP_1 &= 300c_1\ (200s_1+100dt_1)+450(v_1+m_1)(150dt_2+ \\ &\qquad +300s_2)=750 \\ DtP_2 &= 600c_2\ (350s_1+250dt_1)+900(v_2+m_2) \\ &\qquad (215dt_2+685s_2)=1500 \end{aligned}\right\} 2250$$

9000

The above scheme certainly demonstrates that the conditions of simple reproduction does not occur at the edges of the socialist sector, since $S(v_1+m_1) > Sc_2$. Realisation of the surplus $S(v_1+m_1) - Sc_2$ must therefore take place outside the socialist sector. In turn, the means of subsistence produced in the petty-commodity sector exceed the demand of that sector — $Dt\ (v_1+m_1)+(v_2+m_2)<Dtc_2+(v_2+m_2)$; hence $Dtc_2>Dt\ (v_1+m_1)$.

There, therefore, appears the following exchange between the sectors: $S(v_1+m_1) - c_2 = Dtc_2-(v_1+m_1)$; and numerically $775+775-1400=600-450$. As can be seen, the total demand of both sectors for means of consumption (industrial and agricultural) is satisfied; since, $S(v_1+m_1)+(v_2+m_2)+Dt(v_1+m_1)+(v_2+m_2)=Sc_2+v_2+m_2+Dtc_2+(v_2+m_2)$; or $Sv_1+m_1+Dt(v_1+m_1)=Sc_2+Dtc_2$.

This means at the same time that the total demand of both sectors for means of production is also satisfied, consistent with the equilibrium conditions of simple reproduction in the corresponding supply of the departments of both sectors. Simultaneously, however, the part of the product of department I of the socialist sector, which is alloted to department II of that sector, is greater than the part assigned from department II to department I: $\binom{SP_1}{SP_2} > \binom{SP_2}{SP_1}^{*}$

and thus also $\binom{SP_2}{DtP_1} > \binom{DtP_1}{SP_2}$; $\binom{SP_2}{DtP_2} > \binom{DtP_2}{SP_2}$:

$\binom{DtP_2}{DtP_1} > \binom{DtP_1}{DtP_2}$ etc.

* If x and y are regarded as optional cells (sectors) then the circulation from cells x to cells y will be designated as $\binom{x}{y}$. The upper symbol designates the consigner and the lower the consignee.

Since there can appear a lack of circulation balance in the abstract simple reproduction scheme with equilibrium conditions fulfilled, then such a probability is so much greater under conditions of expanded reproduction.

Expanded reproduction is characterised by the fact that the social product produced in department I is greater than the existing demand for restored means of production by both departments:

$$c_1+v_1+m_1 > c_1+c_2 ; \quad \text{hence } v_1+m_1 > c_2.$$

It results from the above that the surplus product m emerges in both departments in measure with the excess of means of consumption. The part of the surplus product over and above that consumed in the non-productive spheres is alloted to increasing the means of production and to raising employment (the wage fund).

Let us designate by $m_1\ c_2$ that part of the surplus product produced in department I, which is assigned (besides v_1 of course) for exchange with department II. Consequently, $v_1+m_1\ c_2$ represents in real form the supply of means of production of department I destined for the reproduction and growth of c_2. The following possibilities now exist: either $v_1+m_1\ c_2$ is applied to the needs of the increase of c_2, or conversely, the increase of c_2 is applied to the dimensions $v_1+m_1\ c_2$ determined primarily by the growth requirements of department I. In the first case, the growth of department I results from the expansion requirement of department II; in the second case, department II adapts itself to department I, to the so-called dimensions of that part of department I accumulation which is not destined for the increase of c_2. Hence department II cannot attain any more than what results from the growth requirements of c_1.

It may be stated that if the first case characterises the perspectives of the socialist economy after achieving industrialisation, then the second variant is distinctive for the conditions of industrialisation.

Hence a strain will develop between the production of means of production and the supply of means of consumption depending upon the dimensions of the c_1 growth requirements. Because this supply in the period of socialist industrialisation is in great measure determined by the petty-commodity producing sector, we further consider the sector division of the economy.

We first of all consider a situation in which production SP_1 and SP_2 rise in the socialist sector with production in the petty-commodity sector remaining stable.

This stability may be relative, i.e., with a growth of gross

production there may be no increase in the market production of the petty-commodity sector. We treat this state as stabilisation in relation to demographic traits and structural transformations in the industrialisation period. There takes place, for example, a migration from the rural areas to the cities. This process is accompanied by a tendency to an increase in the consumption of agricultural produce in the rural areas; while the shift of labour power to industry expands the market for agricultural means of consumption. This rise in demand is accompanied by the additional fact that wages in industry are, as a rule, higher than the incomes previously obtaining in the rural areas.

We establish next that a shift takes place (characteristic of an industrialisation programme) in the disposition of productive potential between the two departments of the socialist sector in favour of department I. If there is a rise in SP_1 (to a certain extent at the expense of SP_2), there will be a simultaneous increase in the consumption fund of department I of the socialist sector in the face of an inadequate growth of SP_2. The additional demand is directed to the means of subsistence of the petty-commodity sector (Dt_2). Two possibilities, however, exist for the petty-commodity sector (with the assumption of stable production prevailing there.) One is a production increase in department I at the expense of department II, as a result of which the diminished supply of agricultural means of consumption strengthens the pressure of demand on department II of the socialist sector. The other is the converse possibility of the growth of department II at the expense of department I, in which case, however, the production fund of department II of the petty-commodity sector should rise, since the growth of the productive power of that department depends upon it. But such a rise cannot be expected by means of circulation from department I of that sector; since, consistent with the previous assumption, production in department I of the petty-commodity sector correspondingly declined. The demand unsatisfied by the sector itself is directed to department I of the socialist sector (agricultural machinery and equipment, chemical fertilisers). Satisfaction of this demand in the first industrialisation phase meets, however, with difficulties. Thus, disturbances appear in both cases, owing to the minimum probability of balanced circulation between the departments and sectors (as demonstrated in the simple reproduction schemes above). The final source of these disturbances is the inadequate supply of agricultural means of

consumption. It is clear that they are also expressed in the value-money sphere of the circulation balance. The pressure of demand for agricultural means of consumption may exert a tendency for the inflationary rise of agricultural prices and for increasing the real income of the peasants,[8] eliminating to a certain degree the increase in real wages

If the rise of industrial production results not only from a rise in employment but also from higher productivity, then the tendency to a decline in prices of industrial articles—exerted by increased productivity—may mitigate the tendency to the rise in prices of agricultural means of consumption. However, the above-mentioned shift in the disposition of labour power between the two divisions of the socialist sector—which is characteristic of industrialisation—as well as the subordination of department II growth requirements for industrial means of production, act in the opposite direction. As a result, subordination of the tendency to a decline in prices of industrial means of consumption is limited by the accumulation needs of department I.

Thus the first plan impels the definitive problem of the commodity character of agriculture. It becomes indispensable to create conditions for the rapid growth of the marketable portion of agricultural production, out of gross production. Along with accumulation, the commodity character of agricultural production definitely determines the course and rate of industrialisation. A basic role in this connection is played by the institutional conditions of agricultural production as well as by the exchange relations between industry and agriculture. Very important consequences flow from this for the socio-economic programme of transformation in the industrialisation period.

* * *

Over the long range, the social tasks of reconstructing agriculture —which can only be executed by means of socialist cooperation— find complete social and economic substantiation. It can be affirmed at the same time that only in that way will the revolution be in a position to eliminate the anachronistic agricultural structure and to raise its productive capacity. This is hence the general perspective of socialist construction. Industrialisation creates real perspectives for collectivisation.

[8] It is clear that the rise in real income also includes the rich peasants who, in this situation, are inclined to increase their market and speculative activity.

If, however, the scarcity of means makes impossible simultaneous investments in industry and those required by agriculture, then the synchronisation of the industrialisation process with the social reconstruction of agriculture may create difficulties and, in certain cases, may even be a source of disturbance for the course of industrialisation.

As is known, the socialist transformation of agriculture requires substantial state subsidies in its first phase. There appears a brake upon private investments in agriculture, with understandable difficulties of compensating for it by state investment. This makes it difficult to increase agricultural production. The check on the investment activity of individual peasants leads at the same time to a rise in the rural consumption of means of subsistence; this results in the failure of agricultural production for the market to rise in proportion to the increased demands of industry and the people employed outside agriculture. Rural demand is moreover directed towards industrial consumers' goods, which creates additional difficulties; since, the consumption branches of industry expand more slowly than production of department I, where the bulk of investments are concentrated. The rise in rural consumption demand may moreover invoke the conviction in the working class that the peasantry does not bear an adequate share of the industrialisation burden. This must react unfavourably on the worker-peasant alliance, which, as is known, is the condition for the success of the socio-economic transformation. If the state should decide to reduce the excessive rural consumption demand,[9] then it would not be possible to avoid drastic measures which would further weaken the worker-peasant alliance. A policy of raising industrial prices may become a much more serious factor in disturbing the course of industrialisation, and in constituting a so much more serious threat if in effect over a long period. They took this well into acccount in the Soviet Union during the take-off period of industrialisation. The resolutions of the fifteenth congress of the CPSU in 1926 stated clearly:

> 'Attempts to apply to industrialisation the methods of price increases would substantially expand our industry (but it would do so) in isolation from all other branches of the national economy; it would lower the level of real wages, raise the countryside *against* the cities; it would strengthen rural differentiation, directing

[9] The 1950 currency reform in Poland had that aim.

available industrial goods only to the rich rural strata — thus creating the conditions for inflation — and in the final analysis would thwart the realisation of the industrialisation tasks.'

At the same time, however, the share of the countryside in meeting the general economic accumulation requirements is indispensable. An effective method of directing the anticipated surplus of agricultural production to industry — constituting an element of real accumulation in the first industrialisation phase — may be that of obligatory deliveries; although the long range effects of that system are reduced by the weakening of incentives for the intensification of agricultural production. For, in this case,t he supply curve of the bulk of agricultural produce is inelastic in relation to prices. Where conditions permit, additional production may be attained by the extensive expansion of agriculture. This may in fact constitute the only possibility in this phase. It is very difficult to carry out industrialisation simultaneously with mass collectivisation in a country with a large petty-commodity sector and a sparse area, and hence with a lack of conditions for the extensive development of agriculture. The question therefore arises of choosing an optimum pattern of relationship between industry and agriculture. Petty economy may appear temporarily justified as long as the results of the first industrialisation phase are inadequate to cover the needs of agricultural production, and the rural backwardness is maintained. For, the difficulties connected with small individual farming willl not be surmounted as long as agriculture operates with primitive production techniques. The gradual transformation of the agricultural structure from the viewpont of the hegemony and priority of industrialisation is therefore dictated under these conditions by direct economic factors as well as by the requirements of the class alliance. The socialist state inspires the gradual socialisation of agriculture by economic and political activity combined with administrative pressure as the means for accelerating the socialisation process. Petty economy may be able to mobilise its latent reserves for a certain period of time in a situation when a growth of agricultural production can be attained only by means of intensification; while the industrialisation level does not assure as yet proper technical bases. An increase of productivity — within the limits to which agronomic science and the technology accessible to the petty economy are able to assure agricultural progress — may be demonstrated for a given period of

time which is adequate for obtaining advantageous economic results from state policy. The renunciation of haste in associating petty property serves in any case to make the alliance of the working class and peasantry a true social power which can be translated into economic gains.

In given conditions this road may create the most lasting premises for the further socialist transformation of agriculture when the level of industrialisation is adequate for the technical bases necessary for that purpose. The relation between the growth of socialist industry and the development of agriculture reflects the capacity of the new system to mobilise the productivity forces in the broad sense under new conditions.

Directly connected with the above is also the question of the attitude to the middle strata and, in particular, to the need for establishing the sphere in which small production, the handicrafts, and private trade may function.

The immediate expropriation of the small producers is not in the interests of the socialist revolution in underdeveloped countries and in those of medium development with large petty-commodity producing sectors. Here, the petty bourgeoisie is a numerically and economically important social stratum. It primarily expects from the revolution protection against big merchant and usurious capital. The revolution can attract to its side a large part of the petty bourgeoisie, if it renders them aid and provides small producers and merchants a certain amount of freedom of production and trade. In this connection, programmatic documents attest that expropriation of the petty producers is not the intention of the revolutionary labour movement.

The resolution of the Fifth Congress of the Polish Communist Party expresses itself as follows on this question:

> 'Expropriation of the property of capitalists and landed-estate owners, as social means of production and as means of exploitation of the working masses, does not mean the expropriation of small commodity producers (thus, not only of peasants, but also of handicraftsmen, small merchants, small industrialists, etc.)' [10]

[10] Communist Party of Poland, *Decisions and Resolutions*, Vol. III (Warsaw 1956), p. 265.

The present position of the revolutionary movement in underdeveloped countries (India, Indonesia, Latin American countries, etc.) as well as of capitalist countries with a certain economic structure, is affirmed in the same spirit. Thus we read in 'The Elements of a Programmatic Declaration' adopted at the Eighth Congress of the Italian Communist Party in 1956 :

> 'The building of a socialist society with a view to the structure of the Italian economy, has to anticipate the defence and development of the handicrafts as well as cooperation with small and medium production which does not have a monopoly character. It is possible to find in the socialist system favourable conditions for their long term development before the transition to higher forms of production, but always on the basis of economic advantage and voluntariness.'[11]

This does not mean that the socialist state limits itself to the socialisation of big property, while the remaing socio-economic sphere of the mass of small and medium enterprises work in the old way, as if nothing has happend. Actually, they obtain a field of activity in the new cooperative-economic organisations, where they are placed under social influence and control, connected with the productivity increase of the industrialisation costs.

The economic organism taken over by the revolution must be rapidly mobilised and be capable of organising socialist industrialisation. In this task it is confronted with difficulties which result from a lack of an experienced administrative and economic apparatus. The rapid growth of heavy industry leads to a situation where the socialised, state, and cooperative consumers' goods enterprises are not in a position to fully satisfy the people's needs. There therefore exists a broad sphere of small production and services which should give small producers and merchants plenty of room to show what they can do. When the revolution consistently creates such perspectives for the activity of the middle strata, it considerably weakens speculative tendencies, which operate against increasing the national income in the interests of the basic masses of the people. Involving the small and medium producers in productive activity means to draw these elements into bearing their share of accumulation and of the cost of industrialisa-

[11] *The VIII Congress of the Italian Communist Party — Selected Documents* (Warsaw, 1959), pp. 43-44.

tion. The state must mobilise the compulsory savings of this sector by allocating them to industrialisation. In case of necessity 'safety valves' may be put into effect (taxation system, location policy, etc.) with the aim of checking and limiting the activity of the non-socialist sector — consistent with the general perspective of building socialism.

5

EFFECT OF THE DEVELOPMENT OF AGRICULTURE ON NATIONAL INCOME GROWTH

Wiktor Herer

I. THE RATE OF DEVELOPMENT OF AGRICULTURE AND INDUSTRY AND THE POSSIBILITIES OF INTERNAL ACCUMULATION IN BOTH SPHERES

MIGRATION FROM AGRICULTURE and the more rapid tempo of development of industry are general economic truths. Smaller or greater differences in the rates of development of agriculture and industry may take place within this framework. In certain situations, this difference is so great, that it leads to a disproportionate development of the whole national economy. In socialist states disparity in the rates of development of agriculture and industry depends — among other things — upon the respective volumes of accumulation, as well as on the directions and range of the mutual effects of the accumulated sums between industry and agriculture.

Let us first examine the problem of the possibilities of accumulation in agriculture and industry, assuming a constant price level in both, and the self-sufficiency of industry in the accumulation sphere. Let us, besides, establish a lack of mutual effects of the accumulated sums between industry and agriculture. In that case, the ratio of development between industry and agriculture will depend on their respective labour productivities and on the extent of migration from agriculture to branches of material production outside agriculture[1]. The productivity levels of agriculture and industry influence the proportionality of their development, since they determine to a great degree the accumulation levels in both of these national economy divisions. Furthermore, the accumulation levels in these production divisions depend upon their levels of

[1] We will deal later with migration into industry, briefly indicating that industry absorbs the basic mass of people migrating from agriculture.

labour remuneration[2].

An explanation of the effect of productivity in agriculture upon the proportions of development of the two divisions of the economy requires a more precisely detailed treatment of the productivity concept in agriculture.

II. TECHNOLOGICAL AND SOCIAL LABOUR INPUT IN AGRICULTURE

We understand by *technological* labour-input the farmers' labour expenditure per hour, incorporated in net products. The productivity index of finished (processed) products may serve for certain purposes. The following factors influence the shaping of the technological productivity level: organisation of the labour process, the level of mechanization, unit productivity of animal husbandry and crops. In this connection, labour productivity depends to a great degree on climatic and soil conditions.

By the concept *social* labour productivity we understand the natural product per person employed in agriculture. Besides the factors of technological productivity, the extent of utilisation of the agricultural labour force greatly influences the volume of this index.

This problem is of great importance in relation to the divergence between labour time and production time and to the difficulties in adjusting the amount of labour power in peasant farming to the size of means of production. Since agricultural labour is seasonal, the shortage of labour power in peak periods may lead to an under-utilisation of the labour force for a considerable part of the year. On small and often on medium size farms the phenomenon of the 'indivisibility' of the labour force appears, in relation to the family character of those farms. In some situations, two able-bodied workers are the full extent of the labour force on peasant farms; while one person may not suffice for all the work, particularly in periods of its highest intensity. There is a great fluctuation in the number of a farmer's yearly working days, depending on the size of the farm, its level of intensity and direction of development.

The social index of productivity is a function of the above discussed technological and social factors. Consideration of these

[2] We treat the consumed portion of the product produced by agriculture as real payment for labour expended in agriculture.

indexes is necessary for an estimate of a country's economic development. An analysis of the disparities which may appear between the technological and social productivity indexes is of very great importance. A problem for discussion is whether indexes expressing net production per person employed in industry and agriculture (in current prices) can also show differences in labour productivity. There are authors who regard such indexes as expressing differences in productivity. S. G. Strumilin, the Soviet economist, is among those who take this position.

Productivity in Agriculture and Industry

An examination of the accumulation possibilities in agriculture and industry requires the use of the social indexes of labour productivity as expressed in net production. We will therefore compare the social productivity embodied in net production in both agriculture and industry.

Statistical data for almost all countries show that net production per employee is much higher in industry than in agriculture. This applies to highly advanced countries (e.g. USA, France, etc.) as to underdeveloped ones (e.g. Greece, Portugal, etc.)

Strumilin has shown that productivity of Soviet agriculture was 3 times lower than in industry in 1925-26[3]. It is estimated that in Poland net production per worker is between 2 and 2½ times higher in industry than in agriculture.

III. THE EFFECT OF PROPORTIONALITY BETWEEN AGRICULTURE AND INDUSTRY ON THE GROWTH OF THE NATIONAL INCOME

Effect of Migration from Agriculture on National Income

The process of population shifts from production spheres of low social productivity to those of higher labour productivity leads to a rise in the national income. Table 1 on next page shows the correlation between the levels of per capita national income and the share of agriculture in employment and national income creation.

[3] S. G. Strumilin, *Na planowom frontie'* (Moscow, 1953), p. 355.

Table 1

CORRELATION BETWEEN PER CAPITA INCOME, THE SHARE OF AGRICULTURE IN THE NATIONAL INCOME AND THE PROPORTION OF THE AGRICULTURAL POPULATION TO THE GENERAL POPULATION OF THE COUNTRY

Country	*Per capita income in 1949 (in US dollars)*	*Share of income produced by agriculture 1950 (in % of gross national income).*	*Proportion of people engaged in agriculture in 1950 (in percentages)*
USA	1455	10	16
New Zealand	856	25	18
Austrialia	679	—	15
Great Britain	773	5-6	6
Denmark	689	22	27
France	482	16	28
Italy	235	30	41
Egypt	100	—	65
India	57	—	65

Source: *Revue Economique*, No. 2, 1957, p. 283.

It is possible to conceive a situation where labour productivity in agriculture and industry as well as all the other factors of national income formation remain constant, while a rise in the national income is accomplished solely as a result of a shift of labour power from agriculture to industry.

Let us try to make more precise the functional dependence between migration from agriculture and the development of the national income. We will use the concept of marginal magnitudes. We introduce the conception of marginal labour productivity of workers in agriculture and industry, which we define as the potential production increase per person resulting from the growth of employment.

We apply the concept of marginal productivity in our considerations in the following concrete manner:

We designate natural growth by Z_n, migration from agriculture to industry by $\triangle Z$, the state of agricultural employment by Z_r. Agricultural employment in the final period will amount to $Z_r + Z_n - \triangle Z$.

If $Z_n = \triangle Z$, then despite the exodus of people from agriculture

the level of agricultural employment will not change (this phenomenon has appeared in Poland in the last few years). If $Z_n > \Delta Z$, then the level of employment rises despite migration. If $Z_n < \Delta Z$, then there is an absolute decline in the number of the agricultural population.

Let us now designate by ΔP_r the increase in production which would have been potentially produced in agriculture as a result of checking migration, or by maintaining in the countryside the full growth of the population actively engaged in agriculture. The potential productivity of the labour migrating out of agriculture will reach $\frac{\Delta P_r}{\Delta Z} = R_r$.

We are concerned here with production which could have been attained by checking migration; not with the production which actual migrant labour creates. If $\Delta Z < Z_n$ or $\Delta Z = Z_n$, then the phenomenon of an absolute decline of agricultural employment cannot appear; and there consequently can be no decline of agricultural production due to migration. In that case, it is possible to speak only about the phenomenon of declining dimensions of agricultural production growth. Let us explain this matter with a concrete example:

In 1955 between 120—150 thousand people migrated from agriculture, although the mechanisation level in 1954—55 basically remained the same. If migration had not taken place, the number of working hours per agricultural worker would have correspondingly declined, since the migrants would have carried part of the agricultural labour. In this sense, it may be maintained that $\Delta P_r = O$, when $\frac{\Delta P_r}{\Delta Z} = R_r = O$. The social labour productivity of the migrant labourers would also be O. If we made a similar accounting for Poznan Wojevodship for another period (1950—54), then it may be supposed that $\Delta P_r > O$ and that $R_r > O$, correspondingly. A similar accounting applied to the same period in Carcow Wojevodship, would show that R_r equalled O.

If the rise of employment in spheres outside agriculture gained from migration out of agriculture, is designated by ΔZ, and the production of migrant workers outside of agriculture by ΔP_p, then in that case, the productivity of migrants form agriculture will be $\frac{\Delta P_p}{\Delta Z} = R_p$

Economic development may shape up as follows: (a) The *first variant* — marginal productivity in agriculture equals O if the decline in labour power does not lead to a drop in agricultural production. Under conditions of an unchanged level of mechanisation, the decline in the labour force is compensated by the rise in the number of working hours of the workers remaining in agriculture. In this siutation, migration raises the national income in the same manner as the employment of jobless workers. The rise in the national income ΔD in this situation is equal to the number of workers migrated from agriculture multiplied by the sum of products produced by additional workers in industry.

$$\Delta Z (R_p - R_r) = \Delta Z. R_p \quad (\text{since } R_r = O).$$

(b) The *second variant* — marginal productivity of migrants from agriculture is greater than O, but lower than the productivity of industrial workers, if $R_r < R_p$; then, $\Delta D = (R_p - R_r)$, or $\Delta D = P_p - \Delta P_r$. In this case, the rise in the national income is equivalent to the difference in the net production by migrants in agriculture and in industry.

(c) The *third variant* — the potential product which migrants could have produced in agriculture is equal to what they produce in industry, if $\Delta P_p = \Delta P_r$. In this case, the migration level will have no effect on the rate of development of the national income.

(d) The *fourth variant* — the product which migrant labour could have produced in agriculture is greater than that which they produce in industry. In that case, migration will retard the development of of the national income $\Delta P_p < \Delta P_r$.

Correlation Between the Varying Productivity of Migrant Labour ($R_p - R_r$) and Range of Migrations

The rise of non-agricultural production is conditioned (among other things) by the following factors:

(1) Technical instruments for an increment in labour power;

(2) Geological conditions, and related to natural circumstances, the power costs of new enterprises.

If additional employment enables the commissioning of new mines, for example, which have very favourable geological condi-

tions, with a relative growth of new, cheap power sources, then the production increase will of course be high. If, on the other hand, a country poor in natural resources is faced with the need of employing additional labour in new mines exploiting poor deposits of scarce ore then the result of additional labour will of course be poor. A similar situation arises with the need of additional exploitation of unfavourably situated coal layers.[4]

The level of qualifications and the general cultural status of newly employed workers is of essential importance.

There is an interdependence (correlation) between the range of migration ΔZ and the differences in the productivity of migrants in industry and in agriculture (R_p—R_r).

The correlation is favourable when migration makes possible great economic growth, enabling gigantic labour inputs in basic investments (e.g., in the communications and power spheres) which raise the productivity of labour in the whole national economy—and at the same time, increase the productivity of the additional workers. This type of correlation (the favourable) may develop over the long range in countries issuing from a state of backwardness. The building of railways, surface roads and great electric power installations, which make possible the mobilisation of great stocks of labour power, enable the achievement of a basic turning point in labour productivity in the whole national economy. Moreover, mass migration dimensions may enable in the long range the great expansion of the machine-building base and the fundamental technical reconstruction of the whole national economy—which would be impossible with a narrow migration range. Countries possessing appreciable raw material wealth, may overcome the so-called 'foreign trade barrier', and at the same time create conditions for a serious rise of productivity in industry by means of the mass utilisation of the labour power of migrants from agriculture.

If the development of migration takes place under conditions of a limited amount of machinery and equipment, due to the technical level of domestic industry and lack of foreign exchange,

[4] The great importance of this factor is shown by a comparison of the situation in Poland and in the Soviet Union. The labour productivity of new workers employed in opening new mines in Siberia is very high. Whereas, the productivity of workers newly employed in the mining industry in Poland during the Six Year Plan was lower than average, since the workers had to reach unfavourably located coal seams.

then there is an unfavourable correlation between $\triangle Z$ and (R_p—R_r). This of course pertains to situations in which the development of migration cannot extend the machine base in a given period of time. Such a situation may actually prevail in short periods, even in 5-year periods. Excessive migration effects a decline in the technical equipment per worker.

If we consider two variants of an industrialisation plan elaborated for a short period, then the variant anticipating an accelerated migration rate—in comparison with a variant anticipating a gradual migration tempo—should assume the necessity of a rise in investments which are distinguished by a relatively low capital formation. Thus, such a variant should assume investments resting rather on low technique, which yields as a result a lower productivity by additional workers.

A variant anticipating a lower rate of migration should be distinguished by a higher capital formation of investments equipped with a higher technique. Such a direction of development is connected with the anticipation of higher productivity of newly employed industrial workers.

It follows from the above considerations that the phenomenon of an unfavourable correlation may ensue under certain conditions between the range of migration $\triangle Z$ and differences in labour productivity attained in industry and agriculture by migrant labour (R_p—R_r).

Unfavourable correlations may result from the following additional factors:

(1) With a rise in migration there arises the general necessity of reaching out to reserves of agricultural labour power which are worse prepared for work in industry. For example, the necessity may arise of directing unschooled peasants to work in factories with complicated technique.

(2) The rapid growth of migration brings about a certain disproportion in housing construction. The housing shortage, long trips to work, holidays in periods of urgent field work—all these factors may make it difficult to raise the qualifications of additional workers and may unfavourably affect labour productivity.

(3) With the growth of demand for labour power the need

may arise to embrace groups of people whose productivity in agriculture was not of the lowest. The reserves of concealed unemployment may be gradually exhausted. The population ebb may lead to a decline of production in individual economies and their possibilities of development may be relatively limited.

Migration from agriculture will effect the maximum rise of the national income when the product $\triangle Z\ (R_p—R_r)$ is at the maximum.

The product of $\triangle Z\ (R_p—R_r)$ will vary greatly depending on concrete circumstances. Conditions may exist when this product will reach the maximum with greatly differing migrations. Industrial development, and investment possibilities in industry may create conditions for the employment on the basis of a high level of capital equipment of large numbers of people migrating from agriculture. At the same time the process of collectivisation may release an appreciable reserve of labour power. It may be said that the employment of labour power released by collectivisation by way of intensification of agricultural production, is very ineffective as compared to the employment of the same labour power in industry (the appreciable spread between R_p and R_r). In this situation maximised development of the national income is attained by the maximum difference in the rate of development between agriculture and industry. Examples of such development are Czechoslovakia, Sweden and England in the nineteenth century. Profitable proportions between the prices of industrial exports and prices of agricultural imports may result in widening the disproportion.

A situation is conceivable in which the maximum product of $\triangle Z\ (R_p—R_r)$ will be reached by a relatively small migration range. The possibilities of employing farmers in industry may be limited by a lack of investment means, with the simultaneous existence of great possiblities of increasing the effectiveness of labour inputs in agriculture itself. In this case, excessive migration may mean a decline in the technical equipment of the newly employed industrial workers, and a simultaneous limitation of the development possibilites of agricultural production. This would mean a great decline in the differential $R_p - R_r$. From the viewpoint of accelerating the rate of national income growth in this situation, a greater proportionality between the rates of development between industry

and agriculture would be very expedient.[5]

The above considerations have actual economic significance only for countries which are so well connected with the system of an international division of labour, that they are able to satisfy the domestic demand for given use values on a mass scale from their own production, as well as by means of international trade. Such possibilities currently exist for many socialist and capitalist countries.

For Czechoslovakia, Poland and Sweden various alternatives may exist to satisfy the domestic demands for industrial and agricultural products. Sweden, for example, has maintained an unchanged agricultural production level for 10 years. At the same time the volume of food imports has been growing in Sweden, while there has been a process of mass migration from agriculture to industry. The rise in the satisfaction of the needs of the country of agricultural produce is to a certain extent effected by imports. A similar process is taking place in Czechoslovakia. If the marginal labour productivity in industry — expressed in world prices — is higher than the productivity in agriculture of migrant labour from the countryside to the cities, then the higher costs of importing means of subsistence may be covered by the export of industrial goods produced by migrant farmers. If $R_p > R_r$ then this type of exchange raises the national income.

Effect of the Wage Level and of the Level of Agricultural Labour Remuneration on the Correlation Between the Development of Accumulation and of the national income

We did not take into account the question of the wage levels in industry and agriculture in our foregoing discussion.

It may be asserted now that migration exerts a positive influence on the development of accumulation, depending upon the dimensions of the difference between the real wages of the additional workers and the labour remuneration in agriculture of the peasant immigrants (by actual labour remuneration is understood the consumption goods consumed by the immigrant peasants). If we designate the magnitude of such remuneration by K, and the number of migrant peasants by ΔZ, then the migrants' labour remuneration

[5] This type of disposition of proportional development is characteristic of the Polish economy in 1955-58.

will equal $\frac{K}{\Delta Z} = r_r$. The wages of the additional workers gained in industry we designate as r_p. The growth of accumulation will be proportional to the product of the size of migration and the differences in accumulation created by the migrant labourers between industry and agriculture. If we designate by ΔO the rise in accumulation, then we obtain the equation $\Delta O = \Delta Z [(R_p - r_r) - (R_r - r_r)]$.

The shift of labour power from agriculture to industry is almost always connected with a rise in labour remuneration. If the pay increase connected with the shift to industry is proportional to the rise in the social productivity of the migrant workers, then the growth of social accumulation created per worker is also proportional to the rise of their productivity. If the increase in pay resulting from the shift of labourers from agriculture to industry is greater than the rise in their productivity, then the growth of accumulation will be smaller than the rise ot productivity.

A situation may arise where a small increase in productivity may be entirely absorbed by the wage increase. Then $r_p - r_r = R_p - R_r$. In that case, migration may bring about only a rise in the national income, without any increase in accumulation. In the process of liquidating agricultural overpopulation, peasants with very low consumption standards may migrate. Employment in industry effects an appreciable immediate rise in the living standards of the newly employed workers. If we add to r_r the costs of housing construction and communal and trading facilities for the new workers, then the costs of shiftng labour power may be fairly high.[6]

Inclusion of domestic industrial production in rural areas may of course lower the costs of shifting labour from the countryside to the towns.

The increase in wages may be smaller than the productivity rise when the growth of accumulation is higher than the productivity increase of 'marginal' workers. The rise of social productivity connected with the liquidation of concealed unemployment may be higher than the increase in wages, since with concealed unemployment $R_r = O$, whereas $r_r > O$.

[6] The same amount of means of consumption require greater social labour input in cities than in rural areas (transportation, storage, costs of retail merchandising, investment outlays connected with building chains of services, eating places, etc.).

If we assume that the labourers remaining in agriculture do not increase their consumption, then the total portion of the national income previously consumed by the migrants is allotted to agricultural investment ($\triangle Z \cdot r_r$). Hence there arises the specific phenomenon of financing agricultural investments by means of migration. The social accumulation increment will consequently amount to $\triangle O = \triangle Z \ [(R_p - r_p) - (R_r - r_r)]$. If besides, $R_r = O$, then the growth of accumulation will be $\triangle Z$. $[(R_p - r_p - r_r)]$ if the net products created by the migrant workers in industry will be equivalent to the decline in the labour remuneration differences in industry and agriculture, multiplied by the number of migrants.

In practice the liquidation of concealed unemployment in agriculture brings about a simultaneous rise of investments and of rural consumption. This means that r_r is partly allocated to investment and partly to consumption. The greater the portion of r_r destined for the consumption of the remaining agricultural labour, the smaller is the part falling to accumulation. A situation may arise where the rise in consumption of those remaining in agriculture, may absorb the total r_r, if the means of consumption released by concealed unemployment are completely used up by the labour remaining in agriculture. Then, with the assumption of a constant level of agricultural production, migration will not be accompanied by a corresponding increase in the commodity character of agricultural production. If the import of means of subsistence is not undertaken, a decline in average real wages will follow in places which compensate for a rise in personal rural consumption and enable the maintenance of a high rate of accumulation.

Such a situation may actually arise under conditions of rapid industrialisation if the farmers are insufficiently interested in investments, or as a result of the improper provision of the rural areas with means of production.

Division of the Net Agricultural Product Between Investment and Consumption

The level of social labour productivity—which is much lower in agriculture than in other departments of production—is the source of limited accumulation possibilities. These possibilities decline with a fall in labour productivity and are only to a certain degree levelled out by a decline in consumption. Together with the capacity to invest, productivity in agriculture declines with a

diminution of the economic range. Besides other factors, the limited accumulation possibility is one of the chief causes of the slow rate of development of agriculture. The limited accumulation capacity is the principal difficulty of the fragmented peasant economy.

There is, moreover, an additional series of factors limiting accumulation in agriculture. The victory of socialism in underdeveloped countries liquidates many of these additional factors, such as the appropriation of accumulation means by landowners, and the excessive share of middlemen in agricultural production. At the same time agriculture is confronted with a new problem—that of financing industrialisation

In underdeveloped capitalist countries the question of lower social labour productivity is deepened by the problems of tenant rent and excessive merchandising margins. These difficulties are the sources of agricultural backwardness and of growing agrarian overpopulation, which retard the development of the national economy.

The difficulties in socialist countries are of a different quality. Low productivity, the limited accumulation possiblities, the low level of agricultural investments—and the necessity of increasing investments connected with this—appear simultaneously with the need for the employment of an ever larger number of people outside agriculture. The extent of sharpness of these contradictions depend upon the economic structure and on the share of agriculture in the formation of the national income. Two parallel phenomena appear in a situation in which agriculture has a large share in the national income and when agriculture absorbs a great proportion of total employment. These are (*a*) a large number of people in the rural areas cannot obtain employment in agriculture; (*b*) a simultaneous insignificant volume of accumulation in industry—hence also a small possibility of employing the superfluous rural population outside agriculture. Industrialised countries have a volume of industrial accumulation, since the share of industry in the national income is large, and a relatively small number of people require employment outside agriculture.

The difficulties of financing growing agricultural investment requirements with a simulataneous rise in industrial investment—required, among other things, to absorb the surplus population in agriculture—may be eased by applying a proper method of agricultural investment.

Methods of agricultural investments must be adapted to the accumulation possibilities. In certain cases the choice of directions of investment, increasing the intensity of agriculture, may raise the demand for agricultural labour power, and may at the same time relieve the seriousness of the problem of accumulation in the national economy. It will thus dispose of the problem of a superfluous agricultural population over a long period. Preferred investments which enable a quantitative rise in breeding and an increase in the cultivated area may play an important role here. This type of investment is of particular importance for Asian and some European countries (such as Bulgaria), where irrigation can effect a revolution in the manner of cultivation, and may cause an increased demand for agricultural labour power (e.g., irrigation makes posisble changing over from wheat to rice cultivation). These are overwhelmingly natural types of investments, expressed primarily in peasant labour inputs. Countries of very low industrialisation levels can resolve the contradiction between accumulation and consumption by means of the rapid development of this type of investment.

Each commodity-money investment in agriculture lowers consumption in the immediate period but creates conditions for its rise in the following period. Investments of a money-commodity type—by which we understandt he purchase by peasants of means of production created in industry—represent the transformation (by means of market exchange) of net products produced by agriculture for those produced by industry. Whereas, every investment of a natural type does not shrink the consumption fund, since the applied investments are synonymous with the increase in the share of of the product created by the peasants in the take-off period.

This relates as much to the national economy as a whole, as to the national income created by individual production cooperatives or individual peasant farms. Investments applied in a natural form furthermore mean the utilisation of labour power reserves and are not antagonistic to consumption. The development of the natural form of investments does not diminish consumption, but makes possible the simultaneous rise of consumption and investments.

Let us assume that the rate of the national income created by agriculture per year is 5 per cent, that agricultural investment is 25 per cent and that the share of investment in net agricultural production is 20 per cent in the take-off year. We designate con-

sumption by K, investment by I, and national income by D. An increase of investments in the money-commodity from will shape up as follows:

Period I	K — 80	I — 20	D — 100
Period II	K — 80	I — 25	D — 105

In the above presentation investment outlays were effected by the purchase of industrial goods. As a result, investment rose to 25 percent, and consumption remained constant. The entire increase in the national income was absorbed by investment.

With the same assumed figures the process will undergo a change as a result of increasing natural investments. To simlpify the reckoning let us assume that the entire commodity-money transaction is locked up in the investments of the take-off period and that the whole investment increment is attained by investment outlays of a natural form. A 25 per cent increase in investments by means of an increase in building achieved by the peasants' own efforts with building materials produced on the farms, contributes to a growth in the national income created by the peasants in the sphere of building. By assuming a 5 per cent rise in the national income in agriculture, the ratio between consumption and investment will appear as follows:

Period I	K —80	I — 20	D — 100
Period II	K — 85	I — 25	D — 110[7]

The very wide application of the natural type of investment in Poland by peasant building activity has been easing to a great degree the contradiction between investment and consumption. The wide application of the natural investment type in agriculture and industry has played a particular role in China.

Effect of Changes in the Social Accumulation Shares in Agriculture and Industry on the Development of the National Income

The existing mutual effects of accumulated means between agriculture and industry make it purposeful to compare the capital formation of increases in the net products in agriculture and industry.

[7] Besides the 5 per cent increase in national income acquired in the building industry.

A comparative examination of capital formation in industry and agriculture requires the application of a specific method of analysis since the possibility of dispersing labour power in branches of production outside agricultural is limited.

The full possibility of alternative choices and transferability of living and materialised labour appears where there exists an alternative between two variants of concentrating inputs of living and materialised labour. Such an alternative and transferability may exist under conditions of collective-farm agriculture in the USSR and in highly developed capitalist agriculture—among others. But an entirely different situation obtains with individual and cooperative farming in Poland. In our conditions, investment mobilises unutilised peasant labour power which cannot be used in other branches of the national economy, and which is in that sense non-transferable. For, labour-saving investments may diminish living labour input in agricultural production, and thus release living labour which cannot always be employed in production branches outside of agriculture. The progress of mechanisation can only be expressed in diminishing the amount of labour expended by the farmers. Additional labour may be applied with low marginal productivity. It may appear that the investment effectiveness is not adequate for a rate of pay on the level applying to PGR's (state farms); nonetheless, the investment will bring about a simultaneous rise in the national income and in accumulation by the very employment of unutilised labour power.[8]

This problem has a very essential meaning for Poland since a considerable portion of the investments sustained in individual and cooperative farming is of the natural type.[9] A similarly important part of peasant labour commissioned in agricultural production owing to investments (e.g, labour expended in breeding as a result of building and melioration investments) is non-transferable in character, and cannot be utilised in other production branches.

[8] By assuming the conventional wage schedule earned by workers in state enterprises, it might appear that the gigantic agricultural investments in China would be unprofitable, despite the fact that these investments undoubtedly yield a rise in the national income.

[9] This concerns peasant labour expended in building on their own farms. For the peasant, this is not paid labour; nevertheless, the product is in the nature of fixed capital calculated in zloty according to estimates applied in building construction. The capital values are not dependent, however, on the forms of covering their production costs.

It is estimated that about 25 per cent of the total value of investments in peasant farming is applied in the form of the peasants' own labour inupt. The labour power utilised in this manner is 'non-transferable'[10] and constitutes an element of the labour power reserves. The zloty invested in socialised industry and one invested in peasant farming are incomparable. A comparative investment effectiveness accounting has to eliminate those elements which cannot constitute a criterion for choice. Under certain conditions, 'non-transferable' agricultural labour, expended either on current production or investment, is such an element. The comparative investment effectiveness in agriculture and industry may be expressed in the indexes presented below:

We designate by IT_r the commodity-money investment input required to attain the net agricultural production increase $\triangle P_r$. By commodity-money input we understand expenditures for the purchase of machines and building materials. This constitutes a transferable element of agricultural investment since a clear possibility of alternatives exists in this sphere (a ton of cement or a ton of steel may be invested either in agriculture or in industry). Changes in the share of social accumulation between agriculture and industry are expressed in corresponding changes in the balance of means of production.[11]

We designate as I_p the investment required to obtain an increase in net industrial production $\triangle P_p$.

We express the comparative capital formation indexes of national income increases in agriculture and industry as follows:

Capital formation in agriculture $\dfrac{IT_r}{\Delta P_r}$.

Capital formation in industry $\dfrac{I_p}{\Delta P_p}$

[10] The indivisibility of the labour power, the seasonal part of agricultural labour, limits the 'transferability' of labour power from agriculture to industry, and creates a given labour reserve which may only be utilised in agriculture in periods free from agricultural labour. This situation likewise creates an inadequate industrial absorption which is not in a position to employ as additional labour power.

[11] Changes in agricultural taxes or price changes in favour of agriculture do not in themselves express a change in the proportions of social accumulation if these changes are not connected with variations in the production structure and in the shares of the means of production.

Comparative capital formation indexes in agriculture and industry illustrate the effectiveness of capitalisation between the two departments and express changes in the rate of growth of the national income, and approaching the levelling out of the corresponding social accumulation shares between agriculture and industry. The question of the capital formation of the national income growth does not, however, exhaust the problem.

The level of social accumulation attained as a result of a rise in the national income in agriculture and industry is of essential importance. The accumulation level in individual and cooperative farming is the function of the operation of two types of factors: the technological factor, which is the level of labour productivity ; and the social factor, which is the level of remuneration of agricultural labour.

We define the real level of labour remuneration in individual and cooperative farming as that part of the national income created in agriculture which is actually destined for consumption. Of course, such an understanding of real labour remuneration will be expressed differently in different regions of the country, among varied economic groups. In certain cases, the size of the consumed portion of the national income is determined by the minimum indispensable for subsistence, and is to a certain degree independent of the amount of labour power expended in a year. The volume of peasant consumption (or real labour remuneration) does not have to be proportional to the number of working hours. In certain situations labour remuneration may remain on a constant level with simultaneous rise in the number of hours worked (an entirely different situation than in industry).

In relation to the above-described agricultural investment, there may be a real increase of accumulation, which is disproportionally higher than the real rise in the national income or actual growth of social productivity.[12]

We will designate as ΔO_r the growth of accumulation attained in agriculture owing to investments (accumulation expended on agricultural and general social purposes).

[12] In certain situations agricultural accumulation is very elastic in relation to income. In 1955-58 income from agriculture rose by 26 per cent while agricultural commodity-money investments grew by 117 per cent and an increase in consumption by 23 per cent (GUS Statistical Bulletin, No,2, 1959).

We will designate the growth of accumulation from industrial investment as $\triangle O_p$.

The comparative investment effectiveness from the viewpoint of accumulation in industry and agriculture will then be expressed in the following indexes:

$$\frac{IT_r}{\Delta O_r}, \qquad \frac{I_p}{\Delta O_p}$$

The volume of the social accumulation increment attained in agriculture and industry will depend on the actual accumulation acquired in both departments as a result of investment. The magnitude of accumulation will depend, among other things, on the range of real labour remuneration in agriculture and industry. A low remuneration level may level out the mutual effects of low labour productivity on the effectiveness of agricultural investment. There may be involved here a high effectiveness of agricultural investment which is effected at a low technical level. A lower pay level than in industry may partly counteract the disadvantageous situation of agriculture from the viewpoint of investment effectiveness.

If the application of mechanisation will bring a real reduction in agricultural labour power—and a decline of the consumption share in the national income in relation to it—then that fact will be expressed in a rise of $\triangle O_r$. The index $\frac{IT_r}{O_r}$ will not be corrected if the application of mechanisation in agriculture leads to a decline in the number of working hours with a constant consumption level.

If investment will bring about a rise in the utilisation of unemployed and a low remuneration rate for marginal agricultural labour power, then the real investment effectiveness may be very high.

Comparative investment effectiveness in agriculture and industry is one of the factors which determines the proportional ratios of development of both. Socialist countries which possess large agricultural labour reserves are characterised by a high agricultural investment effectiveness. Invested commodity-money inputs in agriculture mobilise in these countries great labour reserves and may bring a large rise in the national income, in relation to the investment input.

Under these conditions agriculture may attain a rapid tempo of development. In countries characterised by a lack of labour power reserves[13] agricultural investment effectiveness may be lower than industrial investments. In this connection, too, the rate of development of agricultural production there may be low.

Bulgaria and China are examples of countries which could develop both industry and agriculture at a very fast rate. Possibilities for a relatively rapid development of agriculture exist in the Soviet Union and Poland. Czechoslovakia and the German Democratic Republic are characterised by a relatively weak tempo of development of agriculture[14].

IV. INFLUENCE OF COOPERATIVE LABOUR IN NATIONAL INCOME GROWTH

The Economic Effects of Collectivisation

Cooperative labour in agriculture creates suitable conditions for the mechanisation and rationalisation of the production process besides enabling the outflow of labour from agriculture without detriment to agricultural production.

Collectivisation thus elevates the effectiveness of migration.

Owing to collectivisation, the rise in the national income—as a result of the employment of an additional number of workers in industry—is not checked by the potential loss of net agricultural produce. For collectivisation makes possible the release of labour power from agriculture without detriment to the growth of agricultural production.

As a result of cooperative labour there is a growing difference between the social productivity of migrant labour in industry and agriculture ($R_p - R_r$). The magnitude R_r which may reach to O, declines with collectivisation. Under these conditions, migration may yield important results even with a relatively low productivity level of additional workers in industry (R_p).

[13] In these countries the labour force is to a great degree 'transferable' and an alternative therefore exists in its application to industry or agriculture. Under these conditions an analysis of capital formation only in terms of money-commodity inputs is certainly inadequate.

[14] The factors presented above influence to a certain degree the rate of development of agricultural production in capitalist countries where the economic conjuncture is of decisive importance.

The economic effectiveness of collectivisation depends directly on the possibilities of absorption by industry of the surplus labour force released by the social transformations.

The effectiveness of investment outlays on mechanisation and construction must jointly be expressed primarily in the future national income produced in industry by migrant labour from agriculture.

The tempo of the concentration and mechanisation process must be strictly coordinated with the progress of industrialisation, which moreover has a two-sided connection. In certain situations the industrialisation process may meet an obstacle in the shape of lack of labour power, which cannot always be eliminated by agricultural collectivisation (e.g., Czechoslovakia).

Although industrialisation is the principal condition for the effectiveness of collectivisation, a situation may nevertheless arise when industry cannot absorb the great volume of labour power reserves released by collectivis tion. Within certain limits labour power released by collectivisation may be utilised by agriculture itself by an expansion of the more labour-absorbing branches of agricultural production. The possibilities for expanding such labour-absorbing production branches are determined by those economic effects of collectivisation which may be attained independently of the industrialisation process.[15]

The effective utilisation of the additional labour force resul-

[15] The Bulgarian situation illustrates the possibilities created by collective farms for the development of labour absorbing types of agricultural production. There was no change there in the number employed in agriculture after collectivisation. The surplus labour power was utilised by agriculture itself by extending the area of labour-absorbing types of cultivation (vineyard culture, vegetables, industrial plants) and by means of a very significant expansion of livestock. The increase of the milk-yield attained important result. But the rise in value of agricultural production as compared to the pre-war period was relatively small despite the very considerable increases in the area of industrial plant cultivation and in livestock. It fluctuated between 4-19 per cent during 1953/54and 1956/57, depending upon climatic conditions. The rate of growth of net production would have been lower in that period but for the important rise in the use of fertilisers, in means for plant protection, of fuel and for tie rise in the costs of machinery amortisation (*Maly rocznik statystyczny*' (The Small Yearbook), 1958, p. 524).

Bulgaria has projected a gigantic expansion of irrigation works, which should bring a fundamental turning point in the development of agricultural production. The results of this undertaking may shed new light on the problem of the possibilities for utilising the labour power released by collectivisation.

ting from collectivisation—which exceeds the level of intensification of individual farming—requires basing the collective economy on a modern technical foundation, on contemporary agronomy and zootechniques. The collectivisation processes must be carried out simultaneously with the processes of technical revolution. Gradualism and the voluntary character of social change are necessary conditions for the parallel development of both these processes.

The manner of utilisation of the labour power released from agriculture by collectivisation has an essential effect upon the proportional relationship between industry and agriculture. Directing the surplus labour force back to agriculture will diminish the differential in the rate of development between agriculture and industry. That type of development is characteristic of the industrialised socialist countries. The collectivisation process is accompanied in these countries by a rapid decline in the labour force employed in agriculture. The very tempo of collectivisation ought to be to a certain degree determined by the rate of industrialisation. At the same time, however, the development of collectivisation is determined by a series of factors which are not related to industrialisation—by a series of general social and political factors. This is why it is not possible to speak of any strict functional dependence between the growth of demand for labour power in industry and the tempo of the socialist transformation of the countryside.

The expansion possibilities of individual farming are seriously limited by the very nature of private property. For, an economy based on private property under the conditions of a socialist state, must confront certain obstacles. The limited developmental perspectives of economies based on private property must exert a retarding influence upon the development of agricultural investments and on technical progress. Fragmented economies may lead to unproductive investments (e.g., the excessive increase of horses per capita, the building of premises for inventory and equipment, resulting from an increase in the number of peasant farms). Both these factors may sharpen the accumulation problem in individual farming and lead to the necessity of accelerating the collectivisation process.

The development of the industrialisation of a country sharpens the contradictions of coexistence of private and socialist economies. Industrialisation and the rise of industry's share in the national income increases the demand for additional industrial labour power.

Achievement of a fundamental turning point in living standards and reaching the level of advanced capitalist countries will not be possible as long as a large number of people occupy themselves with unmechanised labour of low productivity on small fragments of land. In this situation the contradiction will grow sharper between the low labour productivity in fragmented agriculture and the high productivity of socialist industry. Sooner or later, the time must come when the further industrial growth of each socialist country—depending on its level of economic development—will confront the obstacle of the petty-peasant economy. This is why the perspective of a country's industrialisation is at the same time its perspective of industrialisation. The development of industrialisation must consequently bring about the collectivisation of the peasant economy.

6

CONDITIONS FOR GENERAL EQUILIBRIUM BETWEEN PRODUCTION AND CONSUMPTION

Kazimierz Laski

THE ASSURANCE OF GENERAL EQUILIBRIUM between production and consumption is one of the most important tasks of socialist planning. It is perhaps unnecessary to stress the importance of this question in conditions where the direct goal of production is the maximum possible satisfaction of the needs of society. Nevertheless, past experience shows that ensuring such equilibrium is not so easy to realise, especially in periods of intensive economic development. Particularly complex problems arise in this sphere in connection with the proportional distribution of the national income between the consumption fund and accumulation, as well as with designating the proportional division of accumulation, particularly of investments.

The choice of just these problems and of proportionality as the subjects of analysis is not accidental. First of all, decisions pertaining to the designation of suitable portions of the national income for accumulation, and those relating to their distribution shape the general rate of economic development and create the general framework within which all remaining economic decisions must be applied. Secondly, in a socialist economy the proportions involved are not the casual decisions of scattered individual producers, but questions of management, directed to a greater or lesser degree by the market and price mechanism, or else, they are the results of conscious decisions made by the central planning organs.[1]

[1] 'If we try to form a realistic picture,' writes M. Dobb, 'of the kind of decisions which confront planners and policy-makers under conditions of economic change, it immediately becomes plain that the key decisions affecting development could not be left under socialism to the automatic adjudication of any market or pricing system. Firstly, there is the decision as to the amount of labour and other resources to be devoted to investment—to constructional work designed to increase the productivity of labour in the future . . . .

The relation between production and consumption is one of the chief elements of the process of social reproduction, in relation to which the well known scheme of Marx constitutes an irreplaceable instrument of theoretical analysis. This is attested—among other evidences—by the number of bourgeois economists, who, when raising the question of economic development consciously or unconsciously unfold the ideas which lie at the basis of Marx's schemes. This pertains to the joint consideration of two sides of the reproduction process—the actual, and that of value—and finds expression in the division of the total social product into two portions (or eventually into more) and in the analysis of the proportions between these portions and the parts composing their values.

The point of departure of the considerations below are Marx's reproduction schemes applied to the requirements of an analysis of socialist economy as well as their development in the works of several contemporary theoreticians.[2]

The Sphere of Analysis

The relation between production and consumption 'in the broad sense' embraces the totality of social production and its consumption in a given period. By production we thus understand the total means of production (department I) and means of consumption (department II). In consumption we include personal and productive consumption. The last may be further divided into production of the consumed means of production and that of accumulation, of which investments are the most important element. In this paper we treat consumption only as personal consumption—hence as the using up of consumption goods—and by production we mean correspondingly the

Secondly, there is the decision as to how this total of investible resources is to be distributed between Marx's two main departments of industry—industries producing capital goods and industries producing consumer goods' [Maurice Dobb, *On Economic Theory and Socialism* (London, 1955), p. 77].

[2] See particularly the work of Charles Bettelheim, '*Les problems theoretiques et pratiques de la planification*', Paris, 1951; and '*La maximation de la croissance economique*', in *Reveue Economique*, No. 1, Jan. 1957. Also M. Kalecki, '*Zagadnienia finansowania rozwoju ekonomicznego*', in the collection, '*Problemy wzrostu ekonomiczenego krajow slabo rozwinientych*', Warsaw, 1958; and '*Dynamika investycji i dochodu marodowego w gospodarce socjalistycznej*', pp. 145-161.

production of consumption goods. The general equilibrium conditions involved here may therefore be expressed as the equilibrium between the supply of consumer goods and the effective demand for them in a given period.

It is clear that equilibrium conditions on the consumption goods market is only part of the problem of general economic equilibrium, which also includes the production goods market. For the latter it is possible first of all to separate transactions whose aim is only to reproduce the consumed means of production, particularly objects of labour. This requires fixing the ratios between the different divisions and branches of the national economy, establishing reciprocal relations between different types of objects of labour. In an extended form, this constitutes the most important part of the so-called analysis of the intra-branch flow, which basically does not apply to smaller spheres of consideration. However, as concerns transactions which result in an increase of the national wealth (investment, rise in stocks and reserves), then their conditions are directly connected with those of equilibrium between production and consumption, which finds its true expression on the consumption goods market. This is why we concentrate attention precisely on the question of what is required for consideration of the total reproduction process.

It is necessary to differentiate general equilibrium, referred to above, from partial equilibrium relating to individual articles. It is later established that conditions of such partial equilibrium may be fulfilled by means of a distribution of the existing stock of social labour (living and materialised) in correspondence with the varied social needs. Moreover, the assumed equilibrium prices on individual goods are determined by the conditions of production. On the other hand, it is necessary to distinguish between equilibrium of production and consumption, and equilibrium of production and social demand. The subject of our analysis will be the general equilibrium condition between production (supply) and consumption (effective demand). It is necessary, however, to strongly emphasise that this is an external although exceedingly important aspect of the problem of equilibrium. The basic aspect of this problem is equilibrium between production and social needs.[3]

Is it possible to speak of the commensurability between produc-

[3] See Ch. Bettelheim, *op. cit.*, p. 294.

tion and social needs, which are quantitatively unlimited in each period (at least in relation to needs of a high order) ? I think it is possible if we understand by social need not the absolute social consumption capacity (which is of course unlimited), but the consumption capacity which can be satisfied on the basis of a certain level of productive power and a given rate of economic development. The consideration of demand, thus understood, in analyses of socialist economy is simply indispensable. Whereas, in capitalist economy this whole question is quite often reduced to demand backed by the necessary purchasing power, i.e., by effective or paying demand.

The essential difference between the two aspects of the problem of general equilibrium is disclosed the moment we assume the existence of equilibrium between the production of means of consumption and effective demand, while part of productive capacity is unutilised — as a result of which social demand is not satisfied on an optimum basis. This situation means lack of equilibrium in the deepest sense—in the sense of equilibrium between production and social need. The lack of such equilibrium is disclosed particularly in the capitalist economy, in which the lesser or greater adaptation of the consumer goods supply to the structure of effective demand is accompanied by the under-utilisation of productive capacity and/or under-utilisation of labour power.

There is no social basis for the above-mentioned phenomenon in socialist economy; although a lack of general equilibrium between production and social need may appear even here. For example, there may exist a disproportion in the development of individual complementary production branches (transforming and raw material industries, for instance) which prevents the full utilisation of productive capacity[4]. This may occur when the stocks of means of production are expanded beyond the limits set by the existing labour power reserves, as a result of which these means of production may in part or as a whole remain idle, etc. The most typical symptom of the lack of this kind of general equilibrium are to be found in socialist economy; while an unemployed labour force appears in underdeveloped countries as a result of the lack of production plants. Attempts to restore equilibrium by means

[4] This type of disproportion appeared in certain branches of Polish industry during the realisation of the Six Year Plan.

of the intensive construction of new plants may—and very often do—come into conflict with the conditions of general equilibrium between production and effective demand. At any rate, in a socialist economy—if we discount planning mistakes, disproportions and backwardness inherited from capitalism—it is possible and necessary to desire the preservation of the conditions not only for equilibrium between production and consumption, but also—and primarily—between production and the needs of society.

I. EQUILIBRIUM BETWEEN PRODUCTION AND CONSUMPTION IN STATIC CONDITIONS

Although the subject that concerns us is equilibrium between production and consumption under conditions of economic growth, we will nevertheless commence with considering the problem under conditions of a lack of growth. We define in this paper the lack of economic growth as a static condition, and the economy in this state as a static economy, using this concept as a synonym for the Marxian conception of simple reproduction[5].

A static economy is characterised by the fact that the physical range as well as the methods of production remain unchanged from one period to another. At the end of each production period the same conditions remain which existed at the beginning of the period and, in particular, society disposes of the same stocks of means of production as it began with. The lack of accumulation is consequently the essential trait of a static economy.

The static economy concept is an abstract theoretical construction, particularly with regard to socialist economy which expands uninterruptedly. Is it therefore useful to consider this concept ? Yes, since the static concept in the above stated meaning, is a constituent part of the dynamic processes (similar to simple reproduction being a constituent part of extended reproduction). Hence an analysis o f static economy reveals the relations which constitute the points of departure for examining dynamic economies[6].

[5] This conception of static certainly does not have the same meaning as in bourgeois economy, particularly in equilibrium theory. The terms static and dynamic correspond to the Marxian concepts of simple and expanded reproduction (Ch. Bettelheim, *op. cit.*, pp. 302-316).

[6] See Karl Marx, *Capital*, Vol. II (Kerr edn., Chicago, 1933), p. 456.

Let us first consider equilibrium conditions between production and consumption in a static condition, assuming a lack of unproductive expenses defrayed from the general social fund[7]. That is of course actually impossible since expenses of this type (general administration, national defence, education, aid to those unable to work, etc.) exist in every society. We make this assumption, however, exclusively for the purpose of demonstrating the influence these expenditures will exert on the process of social reproduction as soon as they are introduced in the analysis. We will further assume that the economy consists only of a socialist sector, in which all are employed in the character of workers or employees. Hence wages are the only form of income, which—as we assume—are entirely spent on the purchase of consumption goods. We, moreover, adopt the other Marxian reproduction diagrams, and particularly the division of total production into department I producing means of production, and department II producing means of consumption, as well as the lack of international trade.

If we designate by C_1 the stock of means of production in department I existing at the beginning of the period and consumed during that period and that of department II by C_2; if we further designate the production wage funds in both departments by V_1 and V_2 respectively and the values of the gross products by P_1 and P_2, then, at the conclusion of the period production will amount to :

in department I	$C_1+V_1=P_1$
in department II	$C_2+V_2=P_2$
Total I and II	$C+V=P$

Part of the product of department I (P_1) equal to C_1 is allotted to the reproduction of the means of production consumed in that department, consequently leaving an increment in means of production of the magnitude V_1. Part of the product of department II (P_2) equal to V_2 is destined for consumption by the workers of that department, leaving therefore an increase of means of consumption of magnitude C_2. The equilibrium condition between production and consumption is therefore the fundamental parity—$V_1=C_2$ (the wage fund of department I must equal the reproduction funds of department II). If this condition is fulfilled, then

[7] Ch. Bettelheim calls the static hypothesis 'purely economic', *op. cit.*, p. 229.

the process of reproduction may proceed further without difficulty. In particular, substituting the equation $C_1+C_2=P_1$ for $V_1=C_2$ we obtain $C_1+C_2=P_1$ or $C=P_1$. This means that gross production of department I satisfies the total reproduction requirements of the consumed means of production in both departments. Similarly substituting V_1 for C_2 in the equation $C_2+V_2=P_2$ we obtain $V_1+V_2=P_2$ or $V=P_2$. This means that gross production of department II adequately covers the demad for means of subsistence in both departments; the conditions for equilibrium are thus maintained.

This may moreover be expressed in some other manner, using the national income conception for that purpose. The national income may, on the one hand, determine the sum derived directly from the sphere of material production (the so-called primitive revenue), and on the other hand, the sum of the newly produced values—in the given period—or the difference between the values of the gross product and the values of the means of production consumed in its production. If we therefore designate the natonal income by D, then $D=V_1+V_2$ or $D=V$ (due to the fact that wages correspond with the assumption of a single form of income). The national income is hence equal to the sum of the wage funds in both departments. On the other hand, $D=P-C$; since, however $P=P_1+P_2$ and $C=P_1$, then $D=P_1+P_2-P_1$ if $D=P_2$. Hence, the total means of consumption produced in the given period enter into its composition. The equivalence of the national income and the produced means of consumption (i.e., the gross product of department II) is in general a specific characteristic of a static economy, since the equivalence of the national income and the production wage fund appears only with the assumption of the non-existence of general social disbursements of a non-productive character. In this case alone would the workers' wages be equivalent to the total of the newly created values, and as a consequence, the own costs of individual commodities produced in socialist enterprises would be equal to their prices. It would mean, besides, a lack of net income—understood as a surplus of income over incurred own costs.

Let us now proceed with an analysis of equilibrium between production and consumption in a static conditon, without the assumption of the non-existence of general social unproductive disbursements. This is important not only from the viewpoint

of bringing our theoretical analysis closer to reality, but also for disclosing the mechanism for financing these disbursements. The source for covering unproductive disbursements of the type mentioned may be either the surplus of newly created values over and above the wages of the productive workers, or an additional product—whose value expression we will designate as corresponding to M_1 and M_2. Together with additional production there appears a new form of primitive revenue, namely, the net incomes of socialist enterprises. By means of a mechanism which does not concern us here, they are subsequently transformed into the income of non-productive workers (so-called secondary income), which eventually go into financing the real disbursements of the non-productive sphere. Maintaining the previous symbol designations we will then have the following production volumes at the end of the period :

in department I	$C_1+V_1+M_1=P_1$
in department II	$C_2+V_2+M_2=P_2$
Total I and II	$C+V+M=P$

Part P_1 equal to C_1 in department I is destined for the reproduction of the consumed means of production, leaving a surplus of means of production of magnitudes V_1+M_1. In department II part P_2 equal to V_2+M_2 is destined for consumption by the workers of that department as well as for consumption by part of the unproductive workers (eventually the real consumption of the non-productive sphere), leaving therefore a surplus of means of consumption of magnitude C_2. The condition of equilibrium between production and consumption is hence expressed in the following fundamental equation :

$$V_1+M_1=C_2$$

(the productive wage fund in department I, as well as part of the non-productive wage fund and eventually other non-productive disbursements which are financed by means of M_1 must be equal to the fund produced by department II). By adding to both sides of the above equation the fund produced in department I (C_1), we obtain $C_1+V_1+M_1=C_1+C_2$ or $P_1=C$; whereas, by adding to both sides of the equation the fundamental expression V_2+M_2, we obtain $V_1+M_1+V_2+M_2=C_2+V_2+M_2$, or $V+M=P_2$. This means that the gross production of department II adequately covers

the demand for means of consumption by the productive workers of both departments as well as by unproductive workers in the non-productive sphere and the condition of general equilibrium is thus maintained.

We may formulate the above in a corresponding manner by means of using the national income conception. Thus, $D=V_1+M_1+V_2+M_2$ or $D=V+M$ (since V and M exhaust the existing forms of primitive revenue). On the other hand, $D=P-C$; but since $P=P_1+P_2$ and $C=P_1$ then $D=P_1+P_2-P_1$, or $D=P_2$. Hence, the national income embraces as before all the means of production produced (equal to the gross production of department II); while the division between productive and unproductive workers is different than in the previous assumption (eventually also for non-productive spheres).

It is very essential to understand the consequence of introducing non-productive disbursements in a theoretical pattern of a static socialist economy. Because, if the production range in that economy is constant by definition, the introduction of non-productive disbursements in the analysis must bring in its wake a reduction of the previously accepted real wage level of productive workers—it does not matter if that is effected by means of reducing nominal wages with prevailing prices, or by raising prices with existing wages. In both cases there appears a spread between prices and own costs in the form of profits assigned by enterprises to the budget, turnover taxes, or other forms of the net income of socialist enterprises. It is also possible to conceive a mechanism by means of which the spread between own costs and prices can be avoided, namely, by shifting the direct taxes paid by productive workers to the state budget.[8] However, the technique of drawing surplus product into the state budget is not important; what is essential is that such a mechanism must be utilised and that it also sheds light on the analogical mechanism for financing productive disbursements in a dynamic economy.

II. EQUILIBRIUM BETWEEN PRODUCTION AND CONSUMPTION IN A DYNAMIC STATE

We consider the concept dynamic in this paper as a synonym of the Marxian expanded reproduction category to characterise

[8] See Joan Robinson, *An Essay on Marxian Economics* (London, 1957), pp.25-26

economies in a state of growth. The trait of a dynamic economy is therefore the expansion of physical production from period to period, the principal condition of which is not only the reproduction of the consumed means of production at the end of the production period, but their increase in comparison with their state at the commencement of the period. A constant growth of stocks of means of consumption located in the non-productive sphere also appears in a dynamic economy; but for the purpose of simplifying the study we assume the lack of that sphere in our analysis of a dynamic economy pattern. Thus, the premise of dynamism will be the expansion from period to period of productive wealth—of the fixed as well as the circulating capital—with a corresponding growth of the production dimensions. Such a concept of dynamism considers the expansion of production which precedes the growth of population (this is proper dynamism), as well as a rise in production which does not keep pace (or only keeps pace) with the population growth (which may be called incomplete dynamism).

We furthermore understand dynamic economy as one in which the rise of production takes place on a constant technical base (corresponding to the Marxian expanded reproduction on the basis of a constant organic composition of capital) as well as the growth of production with a variable technical base (corresponding to the Marxian expanded reproduction on the basis of a rise in the organic composition of capital). In the first case, the dynamic state is accompanied by a basically constant level of labour productivity (and it is possible to that extent, to again speak of incomplete dynamism); while in the second case we have to do with a rising productivity level (and in that respect, with true dynamism). Therefore, the only, but most highly essential trait of a dynamic economy in our calculations, will be the appearance of accumulation. We will, moreover, identify accumulation with investment, by which will be understood both the growth of fixed and circulating means as well as an increase in stocks (inventory). We may regard this as net investment as distinct from gross investment which includes also outlays for the reproduction of the totally and partly consumed labour means. These outlays are financed by means of a corresponding portion of the reproduction fund. Hence, if earlier in the paper we examined the conditions for equilibrium by composing the production sums of departments

I and II from the reproduction fund plus real consumption (of productive workers and then of non-productive workers and the non-productive sphere), now the necessity arises to compare the production sums of departments I and II with the reproduction fund plus real consumption (only of productive workers, consistent with the accepted assumption), plus net investment. Besides, the connecting link of equilibrium is the proportion between the production of means of consumption and the demand for them.

With the aim of setting off the decisive role of net investments in a dynamic economy we assume that it constitutes—together with the rise in employment and productivity conditioned by it—the only source of the increase of production and the national income. This means the assumption of the full utilisation of already existing productive power and the lack of any kind of rationalisation—which in practice enables a certain increase of production without net investment[9].

The particular role played by investment in establishing equilibrium between production and consumption substantiates the suitability of making certain changes in Marx's diagrams[10].

The economy as a whole is divided into two departments—investment and consumption. Department I (investment) does not embrace the production of all means of consumption (as in Marx's), but only the production of investment goods. By investment goods is understood—on the basis of the previous assumption—not only the means of labour, but also all other products (means of production as well as means of consumption) to the extent that they increase the stocks of means of turnover, or are destined for the expansion of reserves. This department produces investment goods for itself as for department II. Similarly, department II (consumption) comprising only the production of means of consumption consumed in the examined period, in a year, for example, supplies the workers employed in both departments of social production.

[9] It is necessary to stress that consideration of a production increase originating outside investment must modify in an important manner a series of conclusions reached later.

[10] See M. Kalecki, *Financial Problems of Economic Growth*, *op. cit.*, p. 574; Ch. Bettelheim, '*La maximation de la croissance economique*', *op. cit.*, p. 8; M. Dobb, *op. cit.*, pp. 84-85; J. Robinson, *The Accumulation of Capital*(Warsaw, 1959), pp. 69, 102, 104 ff.

As pertains to the production of raw materials, auxiliary materials, power, etc., these are related to each department in accordance with the degree to which they are consumed in the production of finished goods, i.e., investment goods and consumption goods. There is consequently assumed the vertical integration of production in which the department embraces all the graduated production planes, beginning with raw materials and ending with finished products[11].

It is further assumed that there exists in both departments a stock of labour objects, auxiliary materials, etc., at the beginning of each production period, adequate for setting the production process into motion. While some workers transform this stock into finished goods, others see to it that it is continuously renewed from current production. As a result, besides producing finished goods each division possesses the same stock of labour objects at the end of the production period as at the beginning. Consequently, the values of final production in each department owe their coming into being exclusively to *living* labour expended in the given period on all production levels as well as to *past* labour transferred by the consumed means of labour. Therfore, final production in each department includes net production as well as amortisation and may be defined as 'net-gross' production[12].

[11] A similar but not identical division scheme may be used by considering certain ideas of Lenin expressed in his work, 'In Relation to the So-called Market Question', (Collected Works, Vol. I, p. 82, Russ. edn.). Lenin distinguished between two divisions in Marx's department I—production of means of production serving to reproduce more means of production and the production of means of production serving to produce new means of subsistence.

The fusion of portions of this last division with department II would give the consumption sector, in which production would be integrated to the degree mentioned above.

[12] Besides, we could have expressed final production in individual departments as exclusively the sum of net production, i.e., as exclusively materialised living labour expended in the given period. It would have been sufficient to assume in each department not only raw materials, auxiliary materials, etc. (to the extent required by final production), but also the renovation of the means of labour as well as the production of facilities on a scale not required to maintain the existing productive efficiency of the fixed capital. Of course, with such an assumption, final production of department I would represent not gross but net investment; and the joint final production of both departments would simply equal the national income. The problems of amortisation and re-investment would consequently be an internal question of each department and would not constitute any problem from the viewpoint of the relations between the investment and consumption sectors.

Owing to all these changes we make use of a division of social production into two departments, the material movement between which consists exclusively of the transfer of investment goods (from department I to department II) and means of consumption (from department II to department I). Moreover, important economic processes take place, of course, within each division, but a closer consideration of this exceeds the limits of this analysis.

Within the framework of the adopted assumption,[13] and designating by A the means of labour consumed in the examined period, and by M and V the wage fund and surplus product (the net revenue of socialist enterprises) respectively; the finished product of department I by I (gross investment) and of department II by K (consumption); as well as the joint finished products in both departments—or the gross national income —by D_b, then we obtain the following picture of social production at the conclusion of the examined period :

in department I	$A_1+V_1+M_1=I$
in department II	$A_2+V_2+M_2=K$
Total I and II	$A+V+M=D_b$

Part I of department I, corresponding to A_1, remains destined for the reproduction of the consumed means of labour, thereby constituting a surplus of investment goods of which a part of magnitude V_1 must be exchanged for means of consumption.[14]

In department II, part K equal to V_2 is destined as means of subsistence for the workers of this division, and there therefore remains a surplus of means of consumption of magnitude A_2+M_2. The principal *condition of equilibrium* is the equation

$$V_1=A_2+M_2$$

since the surplus of means of subsistence over and above the needs of department II must equal the wage fund of department I. If this equivalence is maintained then reproduction proceeds

[13] Maintaining the importance of the assumptions adopted previously: the lack of a non-productive sphere, or of international trade turnover, as well as of the existence of a socialist sector only. Consequently, the forms of income are wages which are totally destined for consumption, as well as net enterprise revenue, which serves to finance investment in a centralised manner (by means of the budget, for example).

[14] The remaining part of this surplus of magnitude M_1 does not have to be exchanged for department II, since, in agreement with our assumption, it does not represent any demand for means of subsistence.

without hindrance. Adding V_2 to both sides of the above equation we obtain $V_1+V_2=A_2+V_2+M_2$, if $V=K$. This means that the production of means of consumption covers the total effective demand represented by the wage funds of both departments. If, in turn we add M_1 to both sides of the fundmental equation, we get $V_1+M_1=A_2+M_2+M_1$. Since $V_1+M_1=I-A_1$ (from the equation $A_1+V_1+M_1=I$), and $M_1+M_2=M$, then we can say that $I-A_1=A_2+M$. If we transpose A_1 to the right side we obtain $I=A_1+A_2+M$, if $I=A+M$. This means that gross investment equals the amortisation fund plus the surplus product in both departments.

The above conditions may also be formulated by means of the national income category, namely: on one side of the equation $D=V_1+M_1+V_2+M_2$, if $D=V+M$; while on the other side $D=D_b-A$ (from the equation $A+V+M=D_b$); since $D_b=I+K$, then $D=K+(I-A)$. Hence the national income is divided between the productive wage fund in both departments and the net revenue of socialist enterprises, while embracing the totality of the produced means of subsistence as well as net investment. Since—as we showed above—with $V_1=A_2+M_2$, there ensue the equivalents $V=K$ and $M=I-A$ (from the equation $I=A+M$), then the utilisation of the national income for consumption and investment (net) is not confronted with any obstacle—consistent with the ratio of its division between wages and surplus product (net revenue of socialist enterprises).

Before proceeding with further considerations, we introduce into our scheme the conception of gross savings (O) which embraces the surplus product, or the net enterprises revenue and amortisation ($M+A$).[15]

This approach is substantiated by the fact that although amortisation—contrary to the surplus product—does not constitute an element of newly produced values, it is, however, a stock of materialised labour appearing in a fluid state. Society, particularly socialist society, has a limited freedom to dispose of this stock, analogical to a certain degree to the situation with regard to the utilisation of surplus products. Socialist society may utilise the amortisation fund to reproduce the consumed means of labour in other, better, technical forms; in extreme cases, this fund—or

[15] See M. Kalecki, *op. cit.*, p. 575.

rather part of it—may be transferred to other branches, which may, moreover, lead to the de-capitalisation of equipment in individual production spheres. In any case, however, the socialist state realises a general-social investment policy which finds expression in investment plans, which are financed by the surplus products as well as by the amortisation fund.

•Designating the amortisation fund and the surplus products in department I (A_1+M_1) as the gross savings in that department by O_1, and A_2+M_2 correspondingly by O_2, our diagram will acquire the following form:

in department I	$V_1+O_1=I$
in department II	$V_2+O_2=K$
Total I and II	$V+O=D_b$

The principal condition for dynamic equilibrium between production and consumption now takes the form

$$V_1=O_2.$$

This is fully understandable since the wage fund in department I must equal gross savings in department II, representing the surplus means of subsistence over and above the requirements of that department. If we now add V_2 to both sides of the above equation, then we obtain

$$V_1+V_2=V_2+O_2$$
$$\text{or } V=K.$$

If we in turn add O to the key equation, then we obtain

$$V_1+O_1=O_1+O_2$$
$$\text{or } I=O$$

This means that department II production fully covers the wage fund in both departments (as in the previous diagram); gross investment is, however, equivalent to gross savings in both departments. In this manner, as M. Kalecki correctly showed, the well-known thesis regarding the equivalence of investments and savings is simply contained in the Marxist scheme of expanded reproduction. We introduced a series of simplified assumptions in the desire to focus attention on the problem which constitutes the essential subject of our consideration, namely, equilibrium between production and consumption in relation to the distribution of the national income between consumption and investment—and

the distribution of investment itself. We will maintain these assumptions in the further development of our analysis. It is necessary to stress, however, that the relationships examined thus far have a corresponding application also to conditions in which the assumptions do not appear.

For example, by relinquishing the assumption of the lack of an unproductive sphere and the accompanying income of the workers in that sphere, we could have applied them to the reproduction scheme by allotting the part M from the surplus product M_1 which would have been the source for financing the corresponding outlays.[16] These outlays could be more simply considered by designating as V_2 the combined wage funds of the productive and non-productive workers in department II. In that case, the final product in department II would contain besides produced consumption goods also the services rendered by non-productive workers which are purchased by the people and those rendered without payment for the benefit of the people.[17] This would, however, lead to obliteration of the distinction between the spheres of material and non-material production as well as to increase in the national income magnitude of the total values of non-productive services.

[16] Designating the part of the surplus product going to maintain the non-productive sphere in department I by M'_2 and by M''_2 in department II; further designating the remaining part of this product which is destined to investment outlays in department I by M_1 and in department II by M_2, we obtain the following reproduction scheme:

in department I	$A_1+V_1+M'_1+M_1=I$
in department II	$A_2+V_2+M'_2+M_2=K$
Total I and II	$A+V+M'+M=D^b$

The fundamental condition for equilibrium is therefore contained in the equivalents $V_1+M'_1=A_2+M_2$.

By designating the sum of those parts of the surplus product in department I which is assigned to investment and amortisation in this department (i.e., the sum M_1+A_1) as O_1 and the corresponding magnitude in department II as O_2, we obtain the following reproduction scheme:

in department I	$V_1+M'_1+O_1=I$
in department II	$V_2+M'_2+O_2=K$
Total I and II	$V+M+O=D^b$

where the equilibrium condition is $V_1+M'_1=O_2$.

[17] In this last case, the services of course do not enter into the composition of K, and the corresponding wages are subtracted from the surplus product in department II.

Insofar as concerns the consideration of foreign trade, the situation would be distinguished by the appearance of a balance of trade, or by one in which there is a lack of such a balance. In the first case, the value of imports would be equal to that of exports; the only result of foreign trade—from the viewpoint of what concerns us here—would be a change in the real structure of the produced national income. These changes—insofar as they relate to shifts between the departments—may be considered in such a way that the total export production is divided into two parts. The part which produces goods constituting an equivalent of imported investment goods are included in department I; while that part which produces an equivalent of the imported consumption goods are correspondingly attached to department II.[18] As a consequence, department I—in this conception—will include the production of investment and export goods, which will make possible a corresponding import of investment goods; while department II will embrace the production of consumption goods as well as production for export, which will enable a corresponding import of consumption goods. All the relationships indicated above, particularly that of the fundamental conditions for equilibrium between production and consumption, would be fully applicable.

As in known, the balance of trade is favourable when the value of exports exceeds that of imports, and is unfavourable in the reverse relation. An excess of exports over imports means a growth in foreign credit and may be considered as investment achieved abroad, just as in our reasoning investment represents an increase in domestic reserves. It is therefore possible to consider export production, in periods when it shows a surplus over imports, as the domestic production of investment goods, and attach them to department I. The equilibrium condition made precise above maintains its strength with the reservation, however, that domestic in-

[18] By designating the surplus of exports over imports by $(Ex\text{-}Im)$, we obtain the following scheme :

in department	I	$V_1+O_1=I+(Ex—Im)$
in department	II	$V_2+O_2=K$
Total I and II		$V+O=Db$

As previously the equilibrium condition will take the form $V_1=O_2$. Adding O_1 to both sides, we get $V_1+O_1=O_1+O_2$; if $I+(Ex—Im)=O$, and $I=O—(Ex—Im)$.

vestment now equals not the total gross savings but gross savings minus the surplus of exports over imports.

Conversely, an excess of imports over exports means a rise in foreign indebtedness and an outflow from the country of additional means which are used to partly finance domestic investments. The equilibrium condition does not change as a result; only, in this case domestic investment equals not gross savings but gross saving increased by the excess of imports over exports.[19] This means that domestic investment would have to be lower without foreign credits than an inflow of additional means from abroad would make possible.

It is moreover possible to introduce other—besides state—economic dispositions; these would, however, require consideration of a whole series of additional factors—particularly the distribution of producers' personal income (of peasants, for example) between consumption and savings (investment), etc.

There is no doubt that our pattern would acquire a rosy complexion if we introduce into the analysis a non-productive sphere, foreign trade, as well as non-socialist dispositions (particularly the peasant economy). But the main subject of our interest, namely, the planned decisions of the socialist state in the sphere of the distribution of the national income and investment, would at the same time lose in expressiveness owing to overlooking a series of important but not indispensable factors. This is why these factors will be in the main omitted also in our further considerations.

Dynamic Equilibrium and the Investment Level

The principal condition of the general equilibrium between production and consumption in a dynamic economy was expressed

[19] Designating the excess of imports over exports by $(Im—Ex)$ we may include it as a component part of domestic investment (I), since the latter owes its emergence not only to the labour expended in department I, but also to the deliveries of equipment, investment materials, etc. from abroad. Because of that, the diagram assumes the following form :

in department	I	$V_1+O_1+(Im—Ex)=I$
in department	II	$V_2+O_2=K$
Total I and II		$V+O+(Im—Ex)=Db$

The equilibrium condition is as formerly $V_1=O_2$. Adding $O_1+(Im—Ex)$ to both sides, we get $V_1+O_1+(Im—Ex)=O_1+O_2+(Im—Ex)$, whence $I=O+(Im—Ex)$.

precisely in the equation $V_1=O_2$. We stop now at the question if there flow from that condition any conclusions with regard to the planned state distribution of the national income between consumption and investment. An expression of that distribution is the relation of investment to the national income, i.e., the so-called *investment level*. This level is expressed in our diagrams as the relation $\frac{I}{D_b}$, hence, as the relation between gross investments and gross national income. A decision determining the investment level is of key significance for the status and perspective of the national economy, and—among other things—for assurance against a disturbance of general equilibrium between production and consumption. It is not difficult to demonstrate, however, that a socialist state may—abstractly speaking—fix an arbitrary investment level (or assign an arbitrary portion of the national income to investment) and despite that assure (at least formally) equilibrium between production and consumption.

Let us assume a certain transferability of labour and production stocks between the two social production departments, as a result of which there exists the possibility of choosing the investment level. Let us further assume a directly proportional dependance between gross investment (I) and the wage fund in department I (V_1), so that an increase (or diminution) of I corresponds to an increase (or diminution) of V_1. Let us finally assume a raised investment level $\frac{I}{D_b}$ to the degree in which equivalence is replaced by unevenness $V_1>O_2$. This means a lack of equilibrium, since effective demand on the part of the investment workers and employees (employed in the tremendously expanded department I) exceeds the corresponding supply of department II; and as a consequence, the joint effective demand of both departments for means of consumption totally exceeds its supply ($V>K$). However, equilibrium must and can be restored by means of the so-called 'compulsory savings' of the portion of V_1 exceeding O_2 imposed upon society. There may be different ways of realising these compulsory savings. If we assume constant wages and prices then we can imagine (but only imagine) an ideal state in which the workers of both departments purchase the means of consumption available on the market and hide the excess of their demand—which equals

V_1—O_2 in stocks or deposit it in savings institutions. In these circumstances, the rationing of means of consumption would be a very real possibility, the result of which would be that people would save precisely the excess of V_1 over O_2, regardless of the degree of prevailing social discipline. However, rationing brings very harmful consequences in its wake, and cannot be regarded as a normal method. Furthermore, in agreement with the prior assumption, the people's income is totally destined for consumption.

For the above reasons we discard the assumption of constant prices (which at any rate cannot be achieved in the given situation, when goods are bought 'on queues', and are subject to speculation), and presume that the state would raise the prices of means of consumption, maintaining nominal wages at the previous level. The latter would eventually be increased but at a more gradual rate than the prices of means of consumption. As a result, the difference will grow between magnitudes K (the so-called production values of means of consumption) and V_2 (the wage fund in department II). This difference, O_2, (the so-called gross savings of department II) will grow until it equals V_1. The fundamental equation $V_1=O_2$ will be accomplished by means of a milder or stronger price inflation, causing a decline in real wages. Whatever may be the mechanism of imposing the so-called 'forced savings' upon society, the decline in real wages means that real consumption must be lower than the level expressed by O_2 and K (with starting point between production and consumption (at least formally) regardless of the magnitude of the investment level, and the equivalence of investment and saving, O=I, is accomplished.

Let us further assume that the state fixes such a low investment level that instead of equivalence, there appears the unevenness $V_1<O_2$. This signifies a lack of equilibrium, since effective demand on the part of investment workers and employees (employed in the vastly contracted department I) is lower than the corresponding supply of department II and, as a consequence, the joint effective demand for means of consumption is smaller than its total supply ($V<K$). In this case, equilibrium could only be restored by applying what we may call 'forced investment', or by means of a rise in consumption. With the assumption that nominal wages and prices are constant, part of the means of consumption of magnitude O_2 exceeding V_1 (and equal to O_2—V_1) cannot be realised and accumulate in stores and warehouses increasing the reser-

ves. Consistent with our definitions, we treat increased reserves as investment, and we transfer the production of these reserves from department II to department I. In that manner an equivalence appears of V_1 with O_2 and of investment with savings ($I=O$).

It is necessary to stress the highly formal character of these considerations, not only in socialist economy, where the above-mentioned phenomenon basically cannot appear (outside of 'forced investments' in the form of a rise in the stocks of damaged and unsaleable means of subsistence), but also in capitalist economy, in which there exists a socio-economic source for the imbalance $V_1<O_2$. Essential equilibrium was restored owing only to the fact that we treated the increase in stocks of means of consumption as investment. But this is a peculiar kind of investment, and that is why we called it 'forced investment'. Not only does it fail to encourage economic development, but it even limits the further possibilities of normal production in department II, due to the fact that it gravitates to the market in the form of unsold stocks seeking realisation. To the extent that formal equilibrium is restored in the economic disposition (within the framework of our accepted definitions) to that extent will that disposition be actually removed from equilibrium between production and consumption.

Other ways of restoring equilibrium between production and consumption, which are natural for a socialist economy (inasmuch as the imbalance $V_1<O_2$ is concerned) are either a price reduction on means of consumption—with the given nominal wages—or an increase in nominal wages—with the given prices of consumption goods. In both cases there will be a diminution in O_2 constituting the difference between the values of the produced means of consumption (K) and the wage fund in department II (V_2). This difference will shrink as long as O_2 is not equivalent to V_1. Equilibrium is restored between production and consumption by the rise in real wages and the simultaneous decline in the volume of savings, while savings are applied to investment (by way of analogy with the 'forced investments' concept, we may define this phenomenon as 'a forced decline in savings').

It is a complete certainty that the important and most difficult problem of socialist economy (in underdeveloped socialist countries) is not the inadequate investment level, but the determination of its permissible volume. Considerations of this question until now might have led to the conclusion that a socialist economy

may arbitrarily fix a high investment level without harming general equilibrium. We can only stress that this is a very formal and abstract thesis.

The truth is that a socialist state can and must fix the investment level because there is no spontaneous mechanism of any kind in a planned economy which can set that level. This by no means constitutes a defect of the socialist mode of production; on the contrary, it is one of the essential—if not the most important—sources of the real superiority of the socialist over the capitalist economy. Bourgeois economists, too, are aware of this, ever more universally expressing and realising the postulate of state intervention in the sphere of investment. The efficacy of such intervention within the framework of an economy which rests upon private ownership of the means of production, is not a problem we can consider here. Suffice it to state that there exists a basic, qualitative difference between the methods of intervention by a capitalist state—which may mainly influence indirectly enterprise decisions in this sphere—and those used by a socialist state—which undertakes direct decisions relative to the dimensions of investment levels, and which possesses adequate means for realising these decisions.

It is necessary, however, to strongly underline that the certain degree of freedom at the disposal of a socialist state does not signify arbitrariness of decisions. The ability to transfer labour and and means of production between the investment or consumption departments is usually very limited. There therefore exists a limit to the rise of the investment level, which is set by the structure of real national income and by the amount of labour means entering into its composition. It is possible to raise this limit by means of exchanging part of domestic production for foreign investment goods—if we relinquish for a moment our assumption of the lack of an international trade turnover. But this is possible only to a certain degree. This pertains to an evern greater extent to foreign credits for investments, which in measure with their appearance at a given period, raise the national income and its corresponding distribution.

The balance of labour power constitutes a further limit to the rise of investments, since the volume of utilised labour means cannot exceed the existing stock and the possible reserves of labour power. Actually, the possibility exists of manipulating the labour-absorption degree of production, which may make the intended

investment to a certain extent independent of the balance of labour power. But this possibility is also clearly limited. Specific limits to the above-mentioned decisions moreover appear even in countries where great demographic elasticity creates the problem rather of inadequate production plant than of working hands.

Involved here is the role of the people's consumption, and particularly of the real wage level, in determining the level of investments. The formal character of our previous reasoning regarding the restoration of equilibrium conditions between production and consumption by means of an arbitrarily high investment level, consisted primarily in that we treated real wages as a dependent variable, the magnitude of which could be freely manipulated. These manipulations, however, have their upper and lower limits. Real wages of course cannot fall below the physiological minimum; for no sooner does it reach that level than it confronts social and political barriers set by the existing level of economic, social development, historically conditioned needs, traditional standards of living, etc. These barriers are determined magnitudes for given countries in given periods, although they change with time and space. The so-called 'inflationary barriers',[20] such as, attempts to depress real wages below these barriers by means of price increases, invokes a reaction on the workers' part in the form of demands for higher nominal wages, which may lead to a rising price-wage spiral of an inflationary or even super-inflationary character.

These barriers are moreover revealed also when the socialist state adopts a rigid or almost rigid price policy—despite a goods shortage —and a rigid, or almost rigid nominal wage policy. Attesting to the negative effects of such a policy are the weakening of incentives for the increase of labour productivity, of its stagnation or even decline, the growth of absenteeism, etc., in the economic sphere; and of working class dissatisfaction—which may assume a serious form—in the political sphere.[21]

We cannot exclude the possibility of fixing the investment range at levels which induce a transitory decline in real wages (for example, national defence requirements, and even acceleration of the rate

[20] See J. Robinson, *The Accumnlation of Capital* (Warsaw, 1958), pp. 73, 75.
[21] See P. Sulmicki, 'Conceptions of Inflation in Socialist Economy', *Mysl Gospodarcza*, No. 5, 1957.

of economic development under conditions of backwardness, which a country hopes to overcome). We omit in our further considerations these cases, which require special treatment and which have—or at least should have—a specialised character. And we consider equilibrium conditions between production and consumption with the assumption that real wages are given, and do not undergo any changes in the period examined. For that purpose we transform somewhat the fundamental condition of dynamic equilibrium to the effect that $V_1 = O_2$.

Now, let Z_1 designate the number employed in department I, and r the magnitude of individual nominal wages at the given prices (i.e., real wages). In that case, the left side of the previous equation will assume the form $V_1 = Z_1 r$.

Let Z_2 further designate the number employed in department II, and R_2 the production volume (in the formerly established sense of net-gross production) per worker employed in that department (the so-called productivity per worker); with r—as formerly—designating the wage magnitude, which is assumed as equal in both departments. Then, gross savings per worker in department II (ignoring the fact that it includes a corresponding portion of amortisation besides surplus product) will amount to $R_2 - r$, and gross savings in the whole department II may be presented as a changed form at the right side of the fundamental equation

$$O_2 = Z_2(R_2 - r).$$

As a result the fundamental condition of dynamic equilibrium now takes the form:

$$Z_1 r = Z_2(R_2 - r).$$

Dividing both sides by r, we get: $Z_1 = Z_2 \frac{R_2 - r}{r}$,

$$\text{or } Z_1 = Z_2 \left(\frac{R_2}{r} - 1\right)^{*}$$

* See Ch. Bettelheim, '*La maximation de la croissance economique*', p. 15. M. Dobb shows an identical relationship in the formula :

$$Li = Lc \frac{(Pc - w)}{w}$$

with Li = amount of utilised labour to produce investment goods.
Lc = amount of labour utilised to produce consumption goods.
Pc = amount of consumers' goods produced per worker in consumption enterprises.
w = wage level measured in consumption goods (See M. Dobb, *Economic Theory and Socialism*, p. 163..)

Conditions of general equilibrium are therefore deeply rooted in the production sphere, and are expressed in given proportions between employment in the investment division and the division producing means of consumption. It follows from the equation presented above, that the employment ratios in both departments depend primarily upon the value expressed by $\frac{R_2}{r}$. We may call it productivity per worker in department II, measured in real wage units. This demonstrates the amount of 'real wages' produced by each worker employed in department II.

The permissible employment in department I (Z_1) is determined, from the viewpoint of equilibrium, by the relation between three magnitudes: (1) employment in the consumption division (Z_2), (2) productivity per worker in that division (R_2), and (3) the magnitude of individual real wages (r).

With a given labour productivity in the consumption division and given real wages, each worker in this division produces a given surplus of consumption goods over and above his own needs. This surplus is the only source from which is drawn the means of subsistence of workers in the investment division. Under these conditions, the employment volume in department I (Z_1) is dependent in direct proportion to the volume of employment in department II (Z_2). The expansion of employment in department I, or the increase of the investment level are therefore possible, without disturbing the equilibrium between production and consumption only when they are accompanied by a corresponding rise of employment in department II.

With employment in department II given, the magnitude of the surplus of consumption goods destined for the investment division is determined either by the relation between productivity in department II (R_2) and real wages (r), or by productivity measured in real wage units $\left(\frac{R_2}{r}\right)$. The higher is productivity in department II—as measured in real wage units—the higher will be the gross savings per worker in that department, and the greater will be the expansion possibilities of department I. Hence, the greater will be the investment level which does not disturb equilibrium conditions.

It is necessary to underline that the value expressed by $\frac{R_2}{r}$ depends—in direct ratio—on labour productivity in department II (measured by the products produced or by R_2); but it depends also—in inverse ratio—on the magnitude of real wages (r). With a low productivity level labour productivity in department II measured in real wage units, or $\frac{R_2}{r}$ is basically low and the investment expansion capacity is consequently limited. But this capacity may be expanded if low productivity in the production of consumers' goods is accompanied by a relatively low real wage level. Low real wages therefore constitute in poor societies one of the essential conditions for the expansion of developmental possibilities and tearing away from poverty—if, of course, the surplus obtained in this manner really serves the process of growth and not as capitalist profits. On the other hand, a high productivity level in department II as a rule means also a high labour productivity as measured in real wage units as well as good possibilities for expanding investments. If, however, a high productivity level in the production of consumption goods is accompanied by a relatively high real wage level, then the possibilities for expanding investment are limited.

In the actual process of economic development labour productivity and real wages are not independent of each other. High productivity creates conditions for high wages, while high wages is, in turn, one of the factors making for high labour productivity. If changes in productivity and wages follow in parallel order, then a higher labour productivity in department II will be accompanied by a correspondingly higher real wage level, while the investment expansion capacity (expressed by a higher magnitude of the investment level) and thus also expanded reproduction remain constant—if other conditions remain unchanged. It follows that under these conditions a uniform rate of growth of productivity and real wages by no means excludes expanded reproduction, and does not constitute a general law of economic development, as has been so often asserted. For, with a proportionate rate of development of productivity and real wages, the value expressed by $\frac{R_2}{r}$ is constant,

and so is '*ceteris paribus*' also the investment level.[22] However, with a more rapid growth of productivity than of real wages, the magnitude $\frac{R_2}{r}$ changes and with that there is a rise in the permissible investment magnitude. From this follows how important may be the role played by the principle of a growth in productivity preceding an increase in real wages, in raising the permissible investment level and accelerating the rate of economic development without market disturbances. This is of particular significance for societies of a low or medium plane of economic development which face the necessity of expanding their investments. For it is easier to temporarily delay the growth of real wages, than it is to reduce them, and to such a low level—under these conditions. Moreover, with real wages rising more rapidly than productivity in department II investment possibilities will decline and a fall in the investment level must follow. The principle of wages rising more rapidly than productivity cannot therefore be reconciled with a normal process of economic development, for it must sooner or later lead to the disappearance of investments, particularly of net investments.[23]

General equilibrium between production and consumption in a dynamic economy does not depend—as indicated by the formula $Z_1=Z_2\left(\frac{R_2}{r}-1\right)$ — on labour productivity in department I

[22] It is assumed, besides, that labour productivity in department I changes at the same tempo as in department II. If productivity in department I rises rapidly, and if we have to reckon with a closed economy (without foreign trade) then the real wage increase must be slower than the average rise of productivity in departments I and II. This is so since the dynamics of real wages are determined by the labour productivity dynamic of department II, not of the economy as a whole.

[23] It is necessary to stress that we have dealt throughout with *real* not *nominal* wages. These elaborations should introduce the relation between the growth of productivity and nominal wages only when considering price dynamics, or more precisely, the cost of living at the same time. Thus, for example, the idea of a more rapid rise of productivity than of nominal wages, often postulated for socialist economy, unnecessarily designate also real wages as preceding productivity if it is accompanied by a decline of consumption goods prices. In these conditions the rise of nominal wages may be considered as the indispensable condition of a policy of reducing consumption goods prices, and of realising a policy of raising real wages precisely alongside of and not instead of raising nominal wages.

(which may be designated by R_1). Of course, from the viewpoint of equilibrium between the supply and demand of consumption goods, the workers in the investment division concern us only as consumers, not as producers. Since it is assumed that real wages are given in the examined period, then, the demand for consumption goods originating in department I is determined solely by the number employed in that department (Z_1) entirely independently of the productivity of their labour in the production of investment goods.

But labour productivity in department I is of exceeding importance. With the same number of employed (Z_1) the investments volume (I) may be entirely different, depending on the productivity per employed worker (R_1) in department I. Will equilibrium between production and consumption consistent with the formula $Z_1=Z_2\left(\frac{R_2}{r}-1\right)$ therefore determine some sort of investment level $\left(\frac{I}{D_b}\right)$, as we stated previously ? The answer is yes, if we assume the proportionality of Z_1 and I, or of employment and final production, and hence constant productivity in the investment division.[24]

This is substantiated to the extent that the general level of labour productivity in the examined period is determined to a much greater degree by prior factors (existing labour's technical equipment, qualifications, production habits, etc.) than by the magnitude of employment in the investment division. A change in the latter is therefore a very important, if not the most important factor in a short period, determining the magnitude and level of investment.[25]

[24] See page 117 of this work where the proportionality of V_1 and I was assumed. With a given magnitude of real wages r, this means at the same time the proportionality of Z_1 (equal to $\frac{V_1}{r}$ and I or constant labour productivity in department I, R_1).

[25] If we consider changes in the department I productivity level with the same ratio of employment in both departments, assuring market equilibrium, then the investment level will of course be higher there, where productivity in the production of investment goods is higher and vice versa. With real wages given, higher labour productivity will be expressed in a greater sum of gross savings per employed worker in department I. Certainly labour

As the materialisation of a sum of living labour by society in a given period, national income is another matter. Fixing the investment level is nothing more than drawing a portion of the stock of living labour away from the production of means of consumption to the production of capital goods whose effect on consumption will be felt after the passage of a longer or shorter period of time. As a result, a corresponding ratio must of course be maintained between labour inputs in the investment and consumption spheres—to the extent that equilibrium should be maintained.

It is not an easy task to maintain equilibrium between production and consumption in underdeveloped countries, where the socialist transformation is inextricably connected with the process of industrialisation. A high investment level is necessary in such countries, particularly when a high degree of natural population growth appears, but on the other hand, labour productivity is low in the sphere of the production of means of consumption; hence, the surplus product which constitutes a basis for investment outlays, is also low in that sphere. As a consequence, the tasks of expanding investments may come into a temporary, but rather highly important conflict not only with the expansion of real wages but even with maintaining their existing level. The way to resolve

productivity is equal to the quotient of the product divided by employment, if $R_1 = \frac{I}{Z_1}$. In turn, investment equals the sum of the wage fund and gross savings, if $I = V_1 + O_1$. Consequently, $R_1 = \frac{V_1 + O_1}{Z_1} = \frac{V_1}{Z_1} + \frac{O_1}{Z_1} = r + \frac{O_1}{Z_1}$.

Labour productivity in department I (R_1) is therefore the sum of real wages (r) and gross savings per employed worker $\left(\frac{O_1}{Z_1}\right)$, and with r given, is greater when $\frac{O_1}{Z_1}$ is higher.

We can now make more precise the shortcoming in the formula $Z_1 = Z_2\left(\frac{R_2}{r} - 1\right)$ from the viewopint of determining the investment level. It consists not so much in entirely omitting labour productivity in department I, but in ignoring the elements composing this productivity in the form $\frac{O_1}{Z_1}$ due to the fact that the second element in the form r is taken into account. In turn, O_1—gross savings in department I—are omitted since their realisation follows directly in the investment division entirely independent of the consumption goods market.

this conflict is first of all to increase production in department II within the limits of existing possibilities—apart from obtaining foreign credits for investment, and curtailing dispensable non-productive expenditures, as well as reducing the consumption of parasitic sectors, if such ones still exist.

Dynamic Equilibrium and Investment Distribution

We have considered the effect of the investment level on the general equilibrium conditions between production and consumption in a given period. Let us call this *the first period.* From the viewpoint of equilibrium—in the first period, investment I concerns us only inasmuch as it is connected with corresponding employment in the investment division (Z_1). This viewpoint would, however, be inadequate if one wishes to examine the effect of investment decisions on future economic growth.

Let us call the time period following the first, the *second period.* Investment goods produced in the first period are commissioned in this period. It constitutes the basis for the growth of employment, productivity, production and of the national income. In this manner is revealed the meaning of investment efforts which consists in renouncing a portion of current consumption for the sake of the future.

A vast part of the productive equipment—which were active in the first period —preserve their productive capability in the second period. The same applies to workers. Let us assume for the purpose of simplification that such is the case for all equipment and workers active in the first period. As a result, primarily the same production process, on the same scale, and in the same proportions will be repeated in the second period. But that will be only part of the production processes of the second period, in which —according to our assumption—there takes place not simple but expanded reproduction. We omit in our further examination of the production process in the second period the consideration that it only repeats what took place in the first period, and concentrate instead on a growth of production.

New factories and production equipment which were produced in the first period have a decisive importance for the growth of production. The quantity of labour required for their production has a decisive effect on the conditions for equilibrium in the

first period; but is a matter of complete indifference from the viewpoint of equilibrium in the second period. New investment objects are ready, living labour has been transformed into materialised (accumulated) labour, and investment, which is the *result* of production in the first period, represents the *point of departure* for new production in the second period. Important for equilibrium in the second period is not the question of how many workers are employed in its execution, but for how many additional workers were created new employment possibilities, and how improved productivity, an increase of production and of the national income are assured. It is therefore possible to state that from the viewpoint of equilibrium in the first period the investment workers appear solely as consumers in that period; whereas, they appear exclusively as producers from the viewpoint of equilibrium in the second period.

The ratio between the growth of employment and of production in both departments of social production is of particular importance for equilibrium in the second period. But they are dependent upon the *distribution* of investments between the investment and consumption divisions. If therefore an examination of the equilibrium conditions in the second period is desired, then it is necessary to occupy oneself with the question of the distribution of investment in the first period.

The investment magnitude in the first period amounts to I. Let us assume that the investment period is the same for commissioned objects in departments I and II, and coincides with the examined period.[26] As a result, productive assets in both departments are increased to I (or more precisely to $I—A$, since investment —let us recall—in our scheme signify gross inputs from which it is

[26] By 'the period examined' is understood here the time adequate for projecting, achieving and commissioning investments. If by 'examined period' is understood—as is usually reckoned—a period of one year, then we must consider the important fact that the investments commissioned in a given year do not have to equal those advanced in the same year. Even more, with a constant rate of investment growth, as a rule investments advanced in a given year will *ceteris paribus* be greater than those commissioned. Whereas, that difference may be very great particularly at the beginning of an industrialisation period, when large investment expenditures are not accompanied by corresponding commissioned investments. This phenomenon appeared clearly during Poland's Six Year Plan period when it constituted an additional and essential cause of the difficulty in achieving equilibrium between production and consumption.

necessary to deduct the amortisation fund in order to obtain a growth in the productive assets; for the purpose of simplification we omit this proposition in our further considerations). That part of I, which we designate as I_1 increases productive assets in department I, while the remainder, I_2 increases the department II assets

Investments commissioned in department I amounting to I induce a rise in employment in that department which amounts to ΔZ_1; correspondingly, I_2 induces a rise in employment in department II, equal to ΔZ_2. Let us further designate productivity per worker employed in newly commissioned investment objects in the second period in the consumption division as R'_2. Real wages is henceforth given, and amounts as previously to r.

We know from the prior calculations that equilibrium conditions are rooted in the production sphere, and that they depend upon the ratio of employment in both departments with a given labour productivity measured in real wage units $\left(\frac{R'_2}{r}\right)$. The concrete rise of employment in both departments must be such as to fulfil the equivalence

$$\Delta Z = \Delta Z_2 \left(\frac{R'_2}{r} - 1\right).$$

From this result determined proportions of department I into I_1 and I_2 depending upon the investment volume necessary to employ one additional worker in departments I and II. This last magnitude has an essential significance for reproduction theory and corresponds to a certain extent with the Marxian concept of the technical composition of capital. We can call this magnitude of investment necessary to employ one additional worker as the '*degree of equipping living labour*'[27] and designate it with the symbol $S = \frac{I}{\Delta Z}$.

We will designate as $S_1 = \frac{I_1}{Z_1}$ this degree of equipping labour in department I, and as $S_2 = \frac{I_2}{\Delta Z_2}$ in department II.

[27] See S. Strumilin, '*Bilans gospodarki narodowej jako instrument planowania, socjalistycznego*' ('The National Economic Balance as an Instrument of Socialist Planning'), *Ekonomista*, No. 1—2, 1955, p. 198.

We will assume at the outset that the degree of equipping labour is uniform in both departments, so that $S_1 = S_2$ or $\frac{I_1}{\Delta Z_1} = \frac{I_2}{\Delta Z_2}$, hence $\frac{I_1}{I_2} = \frac{\Delta Z_1}{\Delta Z_2}$.

This means that investment inputs in both departments should provide the same corresponding increase of employment. Since

$$\Delta Z_1 = \Delta Z_2 \left(\frac{R'_2}{r} - 1, \right)$$

$$\text{or } \frac{\Delta Z_1}{\Delta Z_2} = \frac{R'_2}{r} - 1,$$

$$\text{then } \frac{I_1}{I_2} = \frac{R'_2}{r} - 1.$$

Thus the proportion according to which it is necessary to distribute investment inputs with a uniform degree of equipping labour in both departments, depends—just like the employment ratio—directly on the expression $\frac{R'_2}{r}$, i.e., on the productivity of additional workers in department II measured in units of real wages. The higher this labour productivity $\frac{R'_2}{r}$ the greater will be the part of investment inputs which may be directed to department I—without disturbing equilibrium conditions in the following period—and conversely.

In general, however, the degree of equipping labour is higher in department I than in department II, so that $S_1 > S_2$. This does not affect the results of the analysis made hitherto, although the condition of general equilibrium in relation to investment distribution assumes a somewhat more complicated form. As the basic formulae defining the degree of labour equipment in department I $\left(S_1 = \frac{I_1}{\Delta Z_1} \right)$ and in department II $\left(S_2 = \frac{I_2}{\Delta Z_2} \right)$ we may put $I_1 = S_1 \cdot \Delta Z_1$

$I_2 = S_2 \cdot \Delta Z_2$.

Dividing the first by the second, we get:

$$\frac{I_1}{I_2} = \frac{S_1 \cdot \triangle Z_1}{S_2 \cdot \triangle Z_2}.$$

Since, as we know, $\triangle Z_1 = \triangle Z_2 \left(\frac{R'_2}{r} - 1 \right)$

$$\text{then } \frac{I_2}{I_2} = \frac{S_1 \triangle Z_2 \left(\frac{R'_2}{r} - 1 \right)}{S_2 \triangle Z_2}$$

$$\text{consequently } \frac{I_1}{I_2} = \frac{S_1}{S_2} \left(\frac{R'_2}{r} - 1 \right)$$

This means that the relation between investments which must be directed to department I and those which must be applied to department II—with given productivity measured in real wage units $\left(\frac{R'_2}{r} \right)$ — is directly proportional to the degree of labour equipment in department I, and is inversely proportional to that obtaining in department II. In the given conditions, the higher the degree of labour equipment in department I as compared to department II the greater is the investment portion that may and should be directed to department I—without disturbing equilibrium conditions. And conversely—the lower, in comparison with department II, is the degree of labour equipment in department I, the smaller the part of available investments which may and should be assigned to the development of that department. As concerns the effect of the productivity level measured in real wage units $\frac{R'_2}{r}$ — on investment distribution between departments I and II, it is the same as indicated above, with the given relations between the degrees of labour equipment in both departments $\left(\frac{S_1}{S_2} \right)$. We have thus demonstrated that the conditions of equilibrium between production and consumption in the second period correspond to the distribution of investments in the first period which may be defined by the following equation:

$$\frac{I_1}{I_2} = \frac{S_1}{S_2} \left(\frac{R'_2}{r} - 1 \right).$$

Bettelheim distinguished two exceedingly essential aspects of the investment distribution problem, which are closely connected and mutually interdependent. True investment distribution involves the problem of assigning its corresponding parts to departments I and II (as well as its distribution within the departments which we do not now consider), which is often called the allotment structure or branches of investment. The left side of the above equation deals with that side of the problem. At the same time investment involves for each department and branch of production a concrete choice of objects to be constructed and equipped—a concrete choice with regards to the technical level, which may vary greatly, particularly from the viewpoint of the level of labour equipment, productivity, etc. The right side of the equation deals with the other side of the investment distribution problem; for the symbols S_1, S_2 and $\frac{R'_2}{r}$ express the technical characteristics of new investments on the scale of individual divisions.

Central planning organs exist in socialist economy, which undertake necessary macro-economic decisions in the sphere of investment distribution at their disposal in a given period. These institutions possess the necessary freedom to dispose of investments, depending upon existing conditions and the goals confronting planning. The question of these conditions and aims of investment distribution requires separate consideration. Here it is important to underline that planning institutions, desiring to assure economic equilibrium cannot undertake decisions relating to both sides of the problem of investment distribution independently of each other.

If it is known for what reasons a choice of investment objects, characterised by a given level of the degree of labour equipment and productivity in both departments (with S_1, S_2 and $\frac{R'_2}{r}$ given), is profitable; then, the same decision is strictly defined for the distribution of investments between the two departments $\left(\frac{I_1}{I_2}\right)$. And conversely—if it is considered that for certain reasons it is profitable to make a given distribution of investments among the departments (with $\frac{I_1}{I_2}$ given), then that also de-

fines the technical level of investment objects—at least to the extent indicated by the expressions of the degree of labour equipment and productivity in both departments (S_1, S_2 and $\frac{R'_2}{r}$). *

The interdependence of decisions relating to the divisional structures of investments and their technical levels appear not only in socialist but also in capitalist economy (as in any other mode of production). The specific characteristic of planned socialist economy is therefore not the necessity, but the possibility of harmonising these decisions in a manner consistent with the conditions of equilibrium, the rate of growth of production, etc. These possibilities may be temporarily or entirely forfeited due to mistakes in planning, in realising plans; or even consciously in order to attain some goal even at the expense of equilibrium. It is nevertheless a fact that the social ownership of the main means of production and centralised planning create possibilities for the conscious and rational realisation of the immanent inter-connection between two sides of the investment distribution process. This is another true source of the superiority of planned economy over capitalism —besides the conscious fixing of the investment level. Though there exist under capitalism certain spontaneous adjustment processes, and although there is room for certain regulating influences of the state, decisions in the investment sphere are primarily undertaken by individual enterprises—which are independent of each other so that the maintenance of equilibrium without social friction and losses is hardly probable, if not impossible.

Some of the basic arguments in favour of concentration of decision-making in the hands of central planning organs and in opposition to leaving them to individual enterprises or associations are the difficulties and losses from which the economy cannot be assured without the conscious coordination of investment decisions. Of course, socialist enterprises may and should exercise a certain freedom of investment; but the basic proportions of investment distribution, in the sense of branch structure or technical level, should be determined centrally.

Some economists oppose these postulates and believe that under socialist economic conditions, the enterprises may and should decide in the sphere of investment distribution, on the basis of fix-

*See Ch. Bettelheim, *op. cit.*, pp. 16-17

ing a uniform rate of interest, which is supposed to fulfil the role of a spontaneous market regulator in this sphere. A variant of this viewpoint is the position that with central planning, investment distributions should be accomplished with the 'interests of the enterprises' as the point of departure. And that this should be done by means of a uniform rate of interest, which will assure a distribution of existing stocks identical with the distribut on which would be shaped on the free market, without the existence of centralised planning.[28] Even omitting the specific difficulties which the operation of a rate of interest, in the character of a regulator of investment distribution, would confront in a socialist economy, it is necessary to stress, that such a regulator may, by its very nature, consider only those needs which find expression in effective demand; and what is most important, it acts *ex post* like all market mechanisms. It signalises, for example, that further investments are unnecessary in a given branch (due to their unprofitability) when that investment was previously too high. It also signalises the need for a certain investment (due to high profitability) when it was previously too low in a given branch. Contrary to this, the central planning of investment distribution may and should guarantee equilibrium conditions *ex ante*; which signifies a saving of means and the considerable acceleration of the rate of economic development (moreover, planned investment distribution can, and should consider trend signals in the form of profitability). The attempt to revive under socialist economic conditions numerous, completely independent enterprises, attests to a misunderstanding of the true sources of strength and superiority of that mode of production.

Let us now consider the equation $\frac{I_1}{I_2}=\frac{S_1}{S_2}\left(\frac{R'_2}{r}-I\right)$ which defines investment distribution from the viewpoint of the equilibrium conditions between production and consumption. We limit ourselves here to indicating rather than solving the following problems:

(*a*) It is necessary to state first of all that investment distribution does not depend directly on the magnitude of the investment level

[28] See A. Wakar, '*Wybranē zagadnienia z ekonomii politycznēj socjalizmu*' ('Selected Problems of Socialist Economy'), *op. cit.*, p. 36 ff.

which does not appear in general in the equations presented.[29] This means that whatever the size of the investment fund—whether large or small—its distribution, if it has to fulfil equilibrium conditions, depends on the same laws.[30] Of course, with a large investment fund it is easier to attain the planned goals and maintain equilibrium, than in situations where the stocks are too small but that is another question.

(*b*) If it is assumed that economic development takes place on a low level of labour equipment, and hence, with low productivity in both departments (corresponding to the concept of expanded reproduction on the basis of a constant organic composition of capital), then the proportions of investments distribution among departments I and II will also be constant from period to period (with a constant level of real wages). Actually, in the course of economic growth, particularly in socialist economy, there is an incessant technical progress which is expressed in the rise in the degree of labour equipment (corresponding to the conception of expanded reproduction with a higher organic composition of capital). If it is assumed, however, that this progress takes places uniformly in both departments, and that consequently S_1 and S_2 increase at an equal rate (and besides, that R'_2—labour productivity in department II—as well as r—real wages—grow proportionately), then this progress exerts no influence upon the investment distribution among the two departments $\left(\frac{I_1}{I_2}\right)$. It therefore follows that the investment distribution structure (with $\frac{R'_2}{r}$ constant) depends exclusively on the *relative* magnitudes S_1 and S_2 and not on their absolute levels.

(*c*) Analogical to the department distribution of investments, an important influence is exerted not by the absolute level of real wages but by their relative magnitudes—with regard to productivity in department II. Real wages (r) does not exert any influence on the department investment structure if it rises at the same rate

[29] This pertains to investment distribution and investment levels during take-off periods. If the time factor is considered, then it must be stated that investment distribution in the take-off period depends on the investment level in the following period, and *vice versa*.

[30] See Ch. Bettelheim, '*La Maximation...*', *op. cit.*, p. 17.

as productivity in department II (R'_2), with a constant or proportionately higher level of labour equipment in both departments $\left(\frac{S_1}{S_2} \text{ constant}\right)$. The matter is different if the relative real wage magnitudes undergo changes.

If real wages (r) rise more slowly than productivity in department II (R'_2)—without disturbing equilibrium—then, a larger part of investment outlays may and should be assigned for the development of department I [31]. From this follows the important role of the principle that for accelerating economic development, rises in real wages should be preceded by increases in labour productivity. In general, the effect of a more rapid rise of labour productivity than of real wages should be emphasised in lifting the permissible levels of investment[32]. As we have seen, this is correct; but this influence consists in the fact, that in the conditions mentioned, the portion of permissible investments—from the viewpoint of equilibrium in the second period—in department I rises in relation to total investments, which is a very important factor for accelerating the rate of economic development.

Conversely, if real wages (r) rises more rapidly than productivity in department II (R'_2), then (with constant), the condition for equilibrium in the second period is an increase in the specific gravity of outlays allotted to the development of that department in relation to the general investment inputs. Besides lowering —in these conditions—the permissible investment level, this leads to slowing down the rate of economic development, and even —in perspective—to its complete cessation. The essential fact is that if a policy of increasing real wages more rapidly than the rise in

[31] If in the formula $\frac{S_1}{S_2}\left(\frac{R'_2}{r} - 1\right)$ the magnitudes S_1, S_2 as well as R''_2 and r do not change or rise at the same rate (strictly speaking, if S_1 and S_2 as well as R_2 and r rise at a uniform rate; and if besides, the rate of growth of S_1 and S_2 on the one hand, and R'_2 and r on the other hand, may vary) then the value of this formula $\left(\text{or } \frac{I_1}{I_2}\right)$ does not change. If r rises more gradually than R'_2, then the value of the fraction $\frac{R'_2}{r}$ rises and together with it $\left(\text{with } \frac{S_1}{S_2} \text{ constant}\right)$ rises the value of the whole formula, or $\frac{I_1}{I_2}$.

[32] See page 125 of this volume.

productivity is continued, then the time must come fairly quickly when productivity $\left(\text{measured in real wage units}\frac{R'_2}{r}\right)$ approaches unity. In this situation, almost the entire, severely contracted investment fund would have to be assigned to the development of department II, without the necessary bases in the development of department I.

(*d*) The increase of the investment share of department I, in relation to total investment inputs, plays an important role in accelerating the rate of economic development. As we saw, this is favourable to the more rapid rise of productivity than of real wages. But the question arises if there exist—within the framework of the problems considered—other or additional ways of attaining this objective. Let us assume then that real wages rise at the same rate as productivity in department II, and that as a result, labour productivity in that department—measured in real wage units $\frac{R'_2}{r}$ remains constant. In this situation (as shown in *b*) the department investment structure depends exclusively on the relative magnitudes S_1 and S_2*

It consequently appears that a more rapid increase in the degree of labour equipment in department I than in department II may play an important role in accelerating the rate of economic development, enabling the limitation of the department II investment share and the increase of the share of department I, without disturbing equilibrium in the second period. The gains accruing from the particularly rapid assimilation of modern technique in department I are understood. This department determines the rate of development and the technical level of the entire economy. The adequate rate of growth of production and technique in department II also depend on department I. The possibility of relatively limiting the investment share of department II—in case of the highly strained application of modern techniques in department I—is explainable by the fact that this technique (which is

*If $\frac{R'_2}{r}$ is constant in the equation $\frac{I_1}{I_2}=\frac{S_1}{S_2}\left(\frac{R'_2}{r}-1\right)$ then the change in the magnitude $\frac{I_1}{I_2}$ depends exclusively on the relation $\frac{S_1}{S_2}$.

characterised by our coefficient $\frac{I_2}{\triangle Z_1}$) requires a relatively smaller rise of employment due to the relatively higher productivity of labour. If, however, the rise of employment in department I is relatively lower, then the increase in demand on the part of investment workers will be lower, and so may be also the surplus of means of consumption produced by the workers of department II over and above their own needs. Thus, the very investment requirements of department II will decline when the technical level rises faster in department I than in department II.

But this consideration has also its weak side. There exists primarily the danger (which appeared in Poland to a certain extent) of sundering the two departments in a technical sense (and in certain respects also industry from agriculture) particularly, when the principle involved is applied too rigidly. Furthermore, a slower growth of the degree of labour equipment in department II induces a slower rise of labour productivity, and therefore also a slower increase of real wages—with our assumption of $\frac{R'_2}{r}$ as constant. But the most important obstacle consists in the fact that we have considered this problem solely from the viewpoint of equilibrium between production and consumption. This equilibrium is of course easy to obtain if the rise of employment in department I is lower (among other factors, for the reason that the possibilities for the growth of production in department II are generally limited in the take-off period of industrialisation).

If there exists, however, an appreciable reserve of labour power and a strong natural population growth, then this equilibrium may accompany or even deepen (due to the adaptation of means in the form of a diminution of the rise of employment in department I) the lack of equilibrium between production and social needs A more or less serious dilemma may therefore appear in concrete situations—either equilibrium between production and consumption with unemployment, or no unemployment and a lack of equilibrium. The further consideration of this dilemma falls, however, beyond the scope of this study which is basically limited to the problem of equilibrium between production and consumption.

(*e*) The freedom of economic choice in undertaking planned

decisions by a socialist economy is appreciably greater in the sphere of investment distribution than in that of investment levels. In any given period the fixing of the investment level is to a great degree (but not entirely) determined by the existing situation: the available production apparatus, its transposition possibilities, the foreign trade situation, the actual levels of productivity and real wages, etc. The situation is somewhat different with regard to investment distribution. Considerations regarding the maintenance of economic equilibrium in the period when investment objects are commissioned, certainly impose the necessity of observing the interdependence of certain economic measures (e.g., the departmental structure of investments on the one hand, and their technical level on the other). It is, however, clear that there exist by no means few solutions, each of which assures equilibrium in the coming period, from which planning institutions profit in undertaking necessary decisions with a relatively appreciable degree of freedom.

In this situation the choice of investment combinations—if we disregard the effects of political, social factors, etc.,—should be subordinate to the principle of optimum solutions—from the viewpoint of economic effectiveness. Let us assume, by way of example, that there exist a series of combinations for distributing given investment inputs which fulfil the conditions of the equation $\frac{I_1}{I_2} = \frac{S_1}{S_2}\left(\frac{R'_2}{r} - 1\right)$, and thus assure equilibrium between production and consumption. Let us designate these combinations in the order *a*, *b*, *c*, etc. Let each combination correspond to a given degree of equipment (S_a, S_b, S_c, etc.) and to a given production increase, understood as a rise in the gross national income ($\triangle D_a$, $\triangle D_b$, and $\triangle D_c$, etc.).[33] Each degree of labour equipment S signifies here an accidental technical solution in both departments and expresses the average investment magnitude per one newly employed worker in departments I and II combined $\left(\frac{I}{\triangle Z}\right)$. Similarly, each increase of gross national income ($\triangle D$) signifies a joint rise of net-gross production in both departments (and thus the sum of $\triangle I = \triangle K$).

[33] The symbol $\triangle D$, analogical to the previously used $\triangle Db$, signifies here the increase in the gross national income.

Let us assume that the different combinations of investment distribution are each accompanied by the same degree of labour equipment $S_a = S_b = S_c$, etc., as well as by the same production increase $\triangle D_a = \triangle D_b = \triangle D_c$, etc. Under these conditions—with the assumption *ceteris paribus*—any choice is a matter of indifference. If $S_a = S_b = S_c$, etc. and at the same time $\triangle D_a = \triangle D_b > \triangle D_c$, etc., or if we can obtain different production increases with the same degree of labour equipment then we will of course choose—by assuming *ceteris paribus* — combination *a* which gives the greatest production increase and the highest labour productivity $\left(R'_a = \frac{\triangle D_a}{\triangle Z_a}, \text{ where the given } Z_a \text{ is accompanied by } \triangle D_a \right)$.

In general, however, different combinations will not be characterised by different degrees of labour equipment under the following conditions: (1) if besides, $S_a > S_b > S_c$, etc., (2) if at the same time $\triangle D_a = \triangle D_b = \triangle D_c$, etc., or (3) if different degrees of labour equipment are accompanied by the same production increase, then—on the basis of the same assumption—it is effective to apply the highest degree of labour equipment S_a. For, there is thus gained the highest level of labour productivity, $R'_a = \frac{\triangle D_a}{\triangle Z_a}$ (where the given production increase $\triangle D_a$ is accompanied by the lowest rise in employment), without any additional outlays. It would be all the more necessary to apply the highest degree of labour equipment S_a which would make it possible to gain the highest production increase ($\triangle D_a > \triangle D_b > \triangle D_c$, etc.).

But it may occur that a higher degree of labour equipment will be accompanied not by the same, nor even by a higher, but by a lower production increase; while a lower degree of labour equipment will be accompanied by a higher increase of production. We would then have $S_a > S_b > S_c$, etc., as well as $\triangle D_a < \triangle D_b < \triangle D_c$, etc. In that case, the choice of the highest level of labour equipment will in general make it possible to obtain the highest labour productivity; but that involves a smaller production increase, since employment declines more rapidly than the rise of productivity. On the contrary—choice of a lower degree of labour equipment, generally obtains a lower productivity level while gaining a higher production growth since employment rises faster

than productivity declines[34]. The alternative therefore arises —the saving of living labour and lower indices of investment gains —measured by the attained production increase or the improvement of these indices and the smaller economising of living labour.

This alternative may better characterise the conception of the degree of equipping production—introduced in the analysis—than the familiar conception of the degree of labour equipment. The degree of labour equipment $S = \frac{I}{\triangle Z}$ is the investment input necessary to obtain a rise in individual employment; by degree of production equipment may be understood, analogically, the investment input indispensable to obtain a rise in net-gross production per employed worker (consistent with the customary terminology we will call the degree of production equipment—in this paper—the coefficient of the capital formation of production). If we designate this coefficient of capital formation by the symbol m, then $m = \frac{I}{\triangle D}$*. We stress, besides, that if the relation $S = \frac{I}{m} = \frac{I}{\triangle Z} \cdot \frac{\triangle D}{I} = \frac{\triangle D}{\triangle Z} = R'$ occurs between S and m, or between the degree of labour equipment and the capital formation coefficient, then it means that labour productivity is directly proportional to the degree of labour equipment and inversely proportional to the capital formation coefficient.

Returning to the above-mentioned problem, it is possible to state that a worsening of the indices of investment utilisation consists

[34] It may be assumed that by passing from combination a to combination b productivity will fall, if $R'_b = \frac{\triangle D_b}{\triangle Z_b}$ is lower than $R'_a = \frac{\triangle D_a}{\triangle Z_a}$. It is therefore also assumed that by proceeding from combination a to b, $\triangle D$ rises at a slower rate than $\triangle Z$. It may also be otherwise—$\triangle D$ may increase at the same rate, or even faster than $\triangle Z$ in the measure of its passing to a lower degree of labour equipment. We would then have to reckon with a constant or even rising labour productivity in passing to a lower level of labour equipment, which would pre-determine the choice of that lower degree without any losses (with the assumption of an adequate labour power reserve).

*If, for example, investment amounts to 40 mld zloty, and the resulting increase in the gross national income equals 10 mld zloty, then $m = \frac{40}{10} = 4$ zloty. This means that an investment of 4 zloty is required to attain a 1 zloty rise in the national income.

precisely in the rise of m by adopting the combination which is characterised by a high degree of labour equipment $\left(m_a = \frac{I}{\Delta D_a}\right)$ is greater than $m_b = \frac{I}{\Delta D_b}$, where given I $\Delta D_a < D_b$, etc.). We do not anticipate here whether the increases in the degree of labour equipment and productivity are actually accompanied by a rise in capital formation. We thus do not declare ourselves on the question of the technical choice—which is so strongly desirable in the interests of economic development. When a contradiction arises between the better utilisation by investment of living or materialised labour, we only signalise the existing problems, which, although most closely connected with our theme, nevertheless require special consideration and decisions which do not lend themselves to limitation from the viewpoint of whether or not they attain, or maintain equilibrium between production and consumption.

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Resuming consideration of the conditions of general equilibrium between production and consumption in a dynamic economy, it is possible to assert the following:

1. The conditions of this equilibrium with admissible changes in real wages is expressed by the equation:

$$V_1 = O_2.$$

This equation shows that, from a purely formal viewpoint, there is no limit to the investment level when it determines the same corresponding level of savings.

2. With the assumption of given real wages, equilibrium conditions are reflected in the equation:

$$Z_1 = Z_2 \left(\frac{R_2}{r} - 1\right).$$

This equation establishes the permissible investment level.

3. As applying to investment distribution, the equilibrium conditions in the period when investments are commissioned, stand as follows:

$$\frac{I_1}{I_2} = \frac{S_1}{S_2}\left(\frac{R_2}{r} - 1\right).$$

This equation expresses the immanent connection between planned decisions regarding the departmental structure as well as the technical level of investments.

If the assurance of equilibrium between production and consumption were the only aim of planning, then the fulfilment of the indicated conditions would not be particularly difficult. But economic equilibrium—understood especially as equilibrium between production and consumption—is not the direct goal of socialist planning. It is rather a means for attaining that goal, which can be formulated as the optimum satisfaction of social requirements on the basis of the maximum rates of development of production and of the national income. Realisation of this goal—particularly under conditions of the socialist industrialisation of underdeveloped countries as compared to those of medium development—involves a whole series of difficult and complicated tasks. These relate to: the low levels of productive power, productivity and real wages; the need for a high investment level and of a large proportion of the general investment fund to serve further investments; the necessity to face the problems of agrarian overpopulation, high natural population growth, etc. In conjunction with all these problems it is still necessary to preserve equilibrium between production and consumption. Our considerations only prepare the ground for this type of investigation.

7

SOCIALIST ECONOMIC PATTERNS

Czeslaw Bobrowski

I. PATTERN AND ITS CHANGES

WE USE THE TERM ECONOMIC PATTERN in a different sense than does bourgeois economy. By pattern we understand (in Poland) a certain variant of the socialist economic structure. To put it differently, we mean by pattern the whole complex of management and planning methods, or the economic policy applied in a certain concrete country, or in a certain concrete period. This definition is often regarded as somewhat narrow. But it is necessary to consider that it implicitly embraces also the question of the role of the market —which in a socialist economy is defined by the totality of organisational and planning methods. We would, however, not consider it correct to extend the pattern concept to include its adaptation to the conditions of a capitalist economy; since, only in a socialist structure is it possible to consciously effect changes in the pattern with the objective of creating a harmonious system of planning and management which is free of contradictions.

The first phase of the discussion of economic patterns in Poland (in 1956-57) was characterised by a wealth of criticism concerning the past. It dealt as well with certain questions related to the correction of mistakes. There appeared, too, extremist positions, such as the thesis of the complete autonomy of enterprises or that of guaranteeing the undisturbed operation of the law of value. We stand today on much firmer ground although an appreciable number of problems connected with the Polish pattern have not yet matured to the level of precise scientific conceptions. It is clear today that the fundamental principles of socialist economy cannot be included among problems concerning the pattern, that such questions as the *principles of socialising the main means of production*, or *the principle of centralised planning* do not belong to the sphere of themes connected with the pattern. On the contrary, these themes comprise the practical problems of realising the above principles.

Misunderstandings stemming from the above-mentioned extremist viewpoints have also been clarified. It is clear to all today, for example, that the conception of assuring the undisturbed operation of the law of value reflects certain exigencies, certain tendencies, and not the illusory hope of shunning the serious problems of planning and management by means of the direct application of the law of value. The conception of enterprise autonomy (which does not exist even in the majority of capitalist enterprises) has been changed to the conception of possible degrees of autonomy.

A particular good fortune of the period of pattern considerations to be acknowledged finally, is the realisation that the problem of changing the pattern is by no means reducible to the question of 'correcting' past mistakes, or in general to the outright revision of the activity of the six-year period inherited by us. On the contrary, the problems of the pattern are of a lasting character, since the question of the proper methods of planning and management are most closely related not only to the historical and geographical conditions of each of the countries building socialism, but also to the level of productive power attained by a given country at a given time. In this sense, the notion of a 'good economic pattern', which appeared on the stage two yeras ago, has today been replaced in perhaps everyone's mind by the much more correct concept of a pattern *suitable for a given country at a given stage of development.*

In this conception of the question, the process of changing the pattern is a constant one. The pattern is not changed at one stroke but in a chain-effect manner. It may of course happen that several simultaneous changes are of such an important nature that those following are only complementary. (Such was the case, to a certain extent, with Soviet patterns at the beginning of the first five year plan). It may also occur that the initial changes are fragmentary in character and only after successive attainments reach that degree of change in complexion, when the new pattern is clearly delineated in contrast to the one preceding it. In the first case, a superficial observation will have the tendency to forget the process of complementary changes, and to see only the first decisive phase. In the second case, it is easy to fall into the error of not reckoning with the following phases and considering only final results. Of course, the continuity of the process does not mean that there did not exist long periods of relative or even complete stabilisation of the pattern.

Alongside progressively maturing patterns or those in a declining phase, we simply have to reckon now and then th mature and stable patterns.

The above statement is already banal today. But it must not be forgotten that not so long ago, as a resutlt of the long duration of the patterns created in the Soviet Union during the first five year plan, and because of the lack of alternative propositions, there was a tendency to consider as permanent that which was only a long period stabilisation, and to even deny the possibility of varied solutions of the pattern problem. Today, when the question has been deepened and when new striking facts have appeared, it seems strange not to have perceived earlier how much the very history of Soviet economy—state capitalism in the first months following the October Revolution, the war communism pattern, followed by NEP—could serve to show the relative nature of institutional patterns. These appear in measure with changing conditions which induce a certain effective choice on the basis of a given stage of the pattern.

Besides changes in the pattern with time, the post-war period long ago brought pattern differentiations *in time and space*. This process was particularly clear in socialist China, but in a certain period it was also evident in the European peoples' democracies. In recent years this process has grown so strong that the variability of the pattern has become a self evident fact. The wealth of forms has increased considerably in the last two years, indicating the strength of the current for applying the method of management and planning to the specific conditions of each country, for deriving realistic conclusions from the development of the productive power of the socialist camp.

II. PRIVATE SECTOR AND THE COUNTRYSIDE

Differentiation of the pattern is expressed on several planes: on the most general plane of planning the economy as a whole, on that of organisation and management of the socialist sector of the problems relating to petty commodity production, and finally, on the plane of survivals of pre-capitalist formations.

To begin with the last group of problems, it is necessary to remember that this problem was solved in the USSR in a short time during the first five year plan by the complete liquidation of the so-called

private sector in the towns and by the complete collectivisation of agriculture. There can be no doubt that it was necessary to proceed with the complete socialisation of the means of production in the prevailing phase of development of the socialist economy. In that connection, varying the form of the pattern—referred to above cannot be regarded as a change in the concept of the suitable pattern but only as a different attitude to the problems of the longer or shorter transition stage.

It is known that in the discussions during the first five year plan in the USSR, the problem of the private sector in the towns assumed the alternative—either liquidation or 'growing into socialism'. It is clear that the illusory alternative of petty commodity production and remnants of pre-capitalist formations automatically growing into socialism had to be rejected. When the problem of their attitude to private enterprises was on the order of business in a number of peoples' democracies in the first post-war years, it was resolved as if they faced the same alternative. It may be said today that such a comprehension of the problem involved a failure to perceive the difference in the objective conditions prevailing in the USSR in that period, twenty years ago. Only two countries did not pursue the line of a violent, mechanical limitation—if not liquidation—of private initiative in the towns, namely, China and the German Democratic Republic. Moreover, these countries undertook the successive, planned linking of the private sector to the socialised economy in 'legitimate' private forms (to the extent that it may be put that way), i.e., by way of forming state-private partnerships.

Although this transitional policy allows for the expansion of the private sector, it is not in contradiction to the general line of replaceing private by socialist enterpirses. For, it enables the better utilisation in the meantime of the private network of goods and services production; while subordinating them more firmly to the state. In the nature of things, this question was particularly important for People's China, where the applied policies were motivated—realistically—by the poverty of personnel prepared for economic management, and by the need of utilising for the construction of socialism the knowledge of the national bourgeoisie and of the middle strata.

However interesting, the problems mentioned above are, after all, narrow and of a fragmentary character in a socialist economy.

An inquiry into the concepts of the sphere of agriculture is incomparably more important. In order to properly approach such an inquiry it is necessary to remember the conditions in which matured the Soviet policy of rapid and complete collectivisation. For that purpose it is necessary to look back at the thirties considering at the same time the specific conditions of Soviet geography.

Soviet economists maintain that in that period the capacity for development of the countryside, except for *kulak* farms, was insignificant. This situation was partly connected with the question of the distribution of the means of production, which were concentrated overwhelmingly in the hands of the *kulaks*. The second important element was the prevailing level of the Russian peasant, his meagre capacity to assimilate new techniques. At the same time sharp class struggles erupted on the countryside during the first five year plan period.

The first stage in the realisation of the first five year plan was characterised by a much lower rise in labour productivity and a much higher increase in employment than provided in the plan. Inflation and a rise in agricultural prices followed shortly. This situation required either strong deflation which would have endangered the five year plan at its outset, or exceedingly radical measures which would make possbile the realisation of the main tasks despite towering difficulties. The Soviet Union chose the policy of economic offensive in the attempt to solve the problem of lack of market equilibrium and inequitable division of the social income, which was shifting more and more in favour of the *kulak* farms, with the acceleration of agricultural collectivisation.

With a certain amount of simplification, it is possible to state that collectivisation came into being as a weapon in the struggle to realise the five year plan. Besides its tasks in the sphere of shaping a socialist agricultural pattern it was also a means of getting agriculture to serve a certain greater task—even though it may confront it with certain temporary difficulties (keeping in mind the violation of the principle of voluntariness, which is known today). Despite the gigantic role of collectivisation, it was not the main front. The offensive on this sector was undertaken with the aim of effecting the transition from the NEP to the construction of socialism.

Nor can the specific geographical situation of Soviet agriculture be overlooked in any analysis. This situation was brought to mind

most clearly in recent years with the extension of land cultivation in Central Asia. In an agricultural sense, the Soviet Union is simultaneously Europe and America. Its western part approaches a European-type country of great population density, with its geographical conditions and soil favouring a multi-culture economy. Its eastern part is, however, a terrain where not intensification but area extension is the most economical way to most rapidly expand production. The character of the eastern part of the country without doubt exerted a certain influence on the shape of the pattern for the entire area.

We may summarise the characteristics of that pattern in the following manner: the USSR undertook to solve a whole series of problems by a *single* massive action of broad collectivisation. This meant at the same time the transformation of petty agricultural production into large area economies, a form of *kulak* liquidation and the rapid and large-scale introduction of mechanisation. It was simultaneously a means of bringing new areas under cultivation. Moreover, collectivisation ensued there from compelling experiences and constituted a very important means of increasing social accumulation. They endeavoured to solve nearly all problems of agricultural policy within the framework of collectivisation. Soviet collectivisation maintained its charater as a 'universal instrument' through all the changes undergone by the first five year plan.

Countries which entered the path of socialist construction after the second world war, are different from each other and from the Soviet Union. Among them, for example, is Czechoslovakia, a country of such a high industrialisation level, that smaller or larger agricultural disbursements are of secondary importance from the viewpoint of the general investment process. Also among them are China on the one hand, and the Balkan countries on the other, whose objective conditions for rapid industrialisation are incomparably worse than those of the Soviet Unon. Although the agricultural populations are very *large if not vast* in those countries, it is not possible to compare them to the situation which obtained in the Soviet Union during the first five year plan.

The *kulak* problem was likewise different in those countries than in the USSR at the concluding phase of NEP. This was the case either because (1) historical development created there healthier agrarian structures—without large landed estates and only few large peasant

farms (Bulgaria); or (2) the progress of education and technical knowledge embraced an adequate section of middle and poor farmers so that the capacity for growth was not the monopoly of an insignificant group of the most powerful farms (Czechs, primarily); or finally (3) because anti-*kulak* action was applied from the first days of the peoples' power (China). None of these countries possessed, however, reserves of land which could compensate—by expanding cultivation—for the eventual decline in output which could ensue in the phase of transforming production relations in agriculture. Nor was the land nationalised in any of these countries, and in none of them was the tradition of peasant landownership so short lived as in Czarist Russia.

On the basis of these variations there had to be a difference between the collectivisation policy of the peoples' democracies and that of the Soviet pattern. First of all, there was a more or less farreaching cleavage in the tasks to be realised by collectivisation in the USSR. The system of obligatory deliveries was extended earlier than the wide creation of production cooperatives. The fight against the *kulaks* was waged (in the forms of limiting their rights or of financial pressure) either simultaneously with the formation of cooperatives or previously. Moreover, certain varied types of agricultural producers' cooperatives developed, while—as is kown—for a short time the so-called 'artel' was a related cooperative type in the Soviet Unon.

Collectivisation underwent several phases of development in the European peoples' democracies. These were: rapid development, often connected with the violation of the principle of voluntariness between 1949-53; the phase of restricted development or even of a decline in the number of production cooperatives in the following two or three years. The picture was a complicated one at that time. In Bulgaria and Czechoslovakia cooperatives embraced correspondingly almost the total or about 2/3 of agricultural holdings. In other countries the centre of gravity was the creation of simple forms of cooperation (Rumania). In still other countries, the problem of accelerating the development of cooperative production was stretched over a long period of time.

The case of Yugoslavia is of a particular nature. After exceptionally hot-tempered and often light-hearted collectivisation measures, it was decided to halt and then begin all over again. They were

supposed to attain the so-called general cooperatives embracing mainly the spheres of provisioning and distribution. These general cooperatives have the right to expand their activity in different directions as the cooperators desire, or as they are impelled by the initiative of the leadership. The direction of state policy is to concentrate rural accumulation in cooperatives, so that the cooperatives could be the sources of new investment and of the application of new techniques. This does not mean giving up the idea of production cooperatives as an aim of further development. Yugoslav policy sheds light on the thesis that voluntariness is not only the democratic right of the people, but is also the best economic criterion of the given production cooperatives' aims.

It is hard to visualise the perspective results of actions aimed at introducing elements of collective economy by means of general cooperatives. It does not seem that such actions will attract the masses today. It is furthermore necessary to call attention to the fact that the checking of collectivisation was connected in Yugoslavia with the radical solution of the *kulak* question by limiting the maximum land holding to 10 *ha*. This important attainment was made easier—it is true—by the fact that due to historical conditions, and as a result of the preceding land reform, the number of farms exceeding 10 *ha*. was insignificant in Yugoslavia.

A common trait of collectivisation in the European peoples' democracies (if we disregard fluctuations in individual periods) is the fact that the rate of growth of the cooperatives has been much slower than in the Soviet Union. In like manner, for many years collectivisation has been, or is, a partial and not a common form. In this sense, it may be said that the socialist agricultural patterns in these countries differ from that of the USSR more in scope than in character[1]

The Chinese pattern differs much more from that of the USSR. China was the only peoples' democracy which expected from the outset a broad scope of collectivisation in a fairly short time. Despite a clear decision to that effect by the Chinese Communist Party, the first seven years saw only the preparatory stages for the development of cooperatives. The first stage consisted of agrarian

[1] Of course there exist certain fairly important differences in character, which spring from the aggregation of production cooperatives on a large scale introduced only in the USSR.

reform and the struggle against usury. It may be said that no country in the history of mankind did so much for the peasantry as People's China in that first stage. Owing to the restriction of usury and their release from taxation and usurious rents, about half of all Chinese farms increased their incomes by close to 100 per cent[2] in the course of a year or two. It is of course particularly easy in such conditions to initiate and carry through successful actions which require the confidence and cooperation of the peasant masses.

The transition phase between the agrarian reform and the collectivisation campaign began in 1955. It was utilised to develop the traditional forms of neighbourly mutual aid. Owing to this, nearly 50 per cent of Chinese farms had already acquired some years of experience of work in neighbourly mutual aid by the time of the transition to collectivisation.

In the first phase—which lasted through 1956—China had several types of cooperatives with areas of several acres—sometimes 12 or even less. A type of economy was created in that phase which differed little from the preceding, a type which was understandable even to the most traditionalist members of the cooperative. At the same time bearing in mind the existing unutilised labour force in Chinese agriculture and the difficulty in satisfying the gigantic demand of investment means for the expansion of industry, mechanisation on a large scale was postponed for a considerable period—15 to 20 years. It is worth while adding that the collectivisation process stimulated in China a constant increase in cooperative incomes, resulting, among other things, from the fact that the cooperatives also became the means for expanding side-line occupations.

A comparison of the road followed by the European peoples' democracies in collectivisation and that of China, leads to the conclusion that in Europe we wanted to go far and fast on a more or less limited sector; while China took as a basis a march on a broad front—at first slowly, then stepped up. The broad scope of the rural cooperative farms in China was attained by means of conscious stages, by reckoning with the factor of the peasants' material interests and psychological habits. Only after having reached a high level

[2] In th pre-war period the rate of usurious credit reached 1 per cent daily in China. In extreme cases (inundated rice lands) ground rent—without structures or inventory—reached to 90 per cent of harvested crops.

of rural cooperation, did they begin the second phase characterised by a gigantic impetus and bold intentions. I have in mind here of course the building of the people's communes, in which a whole series of elements were woven into one, namely: a splendid increase in the range of agricultural cooperation, new forms of labour organisation, new forms of remuneration for commune members, increased utilisation of labour power for hydro-melioration on an exceptionally large scale, as well as combining commune activities with a type of industrialisation.

Differentiation of socialist patterns of agricultural development has thus led to the creation of several varied—though more or less related—roads of activity. The direct expansion of production cooperatives may in some cases be the central track; in others, one of many tracks, or it may even be of secondary importance in given stages of development. It is therefore possible, in my opinion, to define when, and under what conditions the acknowledgement of production cooperatives as the central task may be crowned with success.

Soviet collectivisation may in a certain sense be regareded as a special case—from the viewpoint of the specific conditions of the first five year plan period—while the contrary cases, those of the Chinese and Czechs, are typical.

The central problem of the whole of economic life in Czechoslovakia is to utilise the labour force in industry. From the viewpoint of the economy as a whole, the release of every possible individual from agriculture and transfer to the highly productive industry, is the indispensable road to increasing the social income. If production cooperatives in Czechoslovakia show an important increase in productivity per person engaged in agriculture, then, even if there were no rise in output per hectare, even if production costs should rise, they would nevertheless fulfil a positive function in widening the bottleneck for the whole economy. In such conditions, the problems of mechanisation can be easily managed and the co-operators' earnings can be increased, etc.

A no less useful function was fulfilled by the production cooperatives (today the communes) in China although the role of their organisational forms is entirely different. There producers coopratives fulfilled from the very beginning the functions which the more developed countries met previously with certain agricultural policies

which took care of such questions as: consolidation (of very small holdings), melioration, diffusion of agricultural science, etc. Besides regulating property relations, collectivisation is, under these conditions, an instrument for settling the historical legacies of countries of delayed development.

A second and more important element is the full utilisation by underdeveloped countries—for the first time in history—of existing labour reserves. Agrarian overpopulation—the greatest hindrance to industrial progress in China—has been transformed into the principal factor of development.

III. PROBLEM OF CENTRALISATION

The questions of decentralising planning and rebuilding the structure of industrial organisation were the fulcrums of pattern differentiations in the socialist sector. As is known, the pattern evolved in the USSR, and sometimes faithfully copied by people's democracies, is characterised by a high degree of centralisation. Although the direct management of enterprises by central planning factors is unthinkable—except for very small countries—centralism in economic management provided an intermediate organisational link between the enterprises, and the central planning organs. The preponderance of over incentives—which is characteristic of the system in question—resulted in the transitional link acquiring an administrative character and of the mutual relations of individual links relying on the principle of an administrative hierarchy.

As an understandable—though not fully correct—vigorous reaction, centralisation is often regarded today as a common error. No organisational form is either always good or always bad—along with advantages, each possesses faults. It is possible to judge only on the basis of concrete conditions whether it is necessary to acknowledge the faults or advantages as carrying greater weight at a given stage. It is difficult to conceive a system of economic planning, regardless of the country or period, which would not pass through the phase of farreaching centralisation. A people's state must first create an apparatus, train personnel, and work out methods of management before it could attain the same or better results with more subtle methods. The rapid acceleration of the rate of development of the socialist economy, compared to the preceding

period, leads to such a radical change in proportions that at least a temporary application of the strongly centralised management of certain production factors is necessary. Depending on a nunber of factors, the need for strong centralisation may appear on the very threshold of a planned economy, or at a somewhat later phase—as happened with us at the end of the three year plan. At any rate, a farreaching level of centralisation seems inevitable in the earlier periods of planned economy. It is not an accident that in the Soviet Union the question of centralised management appeared—historically speaking—even earlier than the question of planned economy. Nor is it accidental that in the first theoretical attempts to generalise the questions of planning, it was not considered a separate problem but as one of the attributes of centralised economic management. On the threshold of the first five year plan organisational experience was already incomparably richer than the theory and technique of planning. It should be no surprise for Marxists, however, that the theory of planning was tooled on the lathe of practice, of activity.

Historical-geographical factors were not without significance to the ascendancy of centralisation tendencies. It may be said that certain dangers from farreaching centralisation were certainly less of a threat to the USSR than they would be to much smaller countries, more poorly endowed by nature. Moreover, the benefits the Soviet Union was able to obtain from farreaching centralisation were exceptionally important.

But there is a reverse side to the medal of a high degree of centralisation. Some defects of that organisational system appear at every stage of development, others (the majority) become important only on the higher levels. The danger of bureaucratisation is always real; but the losses suffered from that source are incomparably greater at the time when a technical intelligentsia is already formed, and which is capable of standing on its own feet, without being led by the hand. The risk of voluntarism or subjectivism, the disregard of objective economic law is organically connected with a high level of concentration. But that danger becomes much greater when the most obvious, most incontroversial directions of a production development have already been passed, when the economic backwardness of the country is already to a certain extent overcome.

The character of the problem of raising the technical level changes in measure with economic development—it is not a question at this point of appropriating foreign experiences and transplanting them on our soil by simply expanding, or by creating new productive forces and proceeding on our own technical power. Nor is there the question of at least widely transforming foreign technical attainments and adapting them to the existing technical equipment of the country. A high level of concentration is favourable to the solution of the first of the above problems, but is hardly suitable for the solution of the second. And the situation is similar with the growth of present-day productive power; which means, that what we may call potential technical progress surpasses the rise in the skills required to utilise these new powers. Finally, the situation also changes from the viewpoint of central planning. In a narrow production range the central plan may, to a fairly large extent, operate with natural indexes. Natural indexes begin to prevail with the extension of the range of aggregate production (referring to collective indexes which are only points of departure for individual tasks) when the central plan is technically unable, with the greatest dexterity, to embrace a fairly large number of changes.

Independent of the above faults of high management concentration, which occur with great severity only in the later development phases, two permanent weaknesses exist in this system. Individual parts and indexes of the plan automatically join with the organic whole only on the level of the enterprise or lower. The internal harmony of the various indexes on a national economic scale does not lead automatically to the same condition in the enterprises. With a high degree of management concentration there exist the real and unavoidable risks of placing tasks before enterprises with which they actually cannot cope with—inasmuch as the possibility of a contradiction between decisions on individual problems is *de facto* always present.

Another element, flowing from the above, is that the enterprises would lose their individuality. An enterprise is not only a given aggregate of production factors; it is also an assembly of people, which in a socialist society constitute the social connecting links. The diffusion of knowledge among the workers, the maintenance of live contacts between the leading corps and the working masses, the rise of the sense of working class responsibility for the national

economy as a whole, the concrete live influence of the masses over the disposition of the national economy—all these problems can be solved incomparably more successfully within the framework of a more or less broad enterprise autonomy, than with a great concentration of dicision-making.

IV. ORGANISATIONAL STRUCTURE OF SOCIALIST SECTOR

The reaction to the classical pattern of the high concentration of management was first expressed in Yugoslavia with the legal appearance of workers' factory councils. This was followed by the extension of enterprise autonomy, without which the role of the councils would of course be fictitious. Of key importance to understanding the dominant trends in Yugoslavia are the provisions of its first five year plan. This was the most ambitious and downright most volunteristic plan drawn up by anyone, anywhere.

In the first post-war years theYugoslavs adopted a strange pattern, which more than anybody else ignored the specific conditions of their country and its real possibilities. The plan's weaknesses became particularly glaring under conditions of the conflict which developed between Yugoslavia and the other socialist countries. Without denying the originality or value of the Yugoslav contributions, it must be stated that the extremism of some of their decisions springs from a psychological reaction in the opposite direction to previous exaggerations.

The search after a new pattern in Poland may also be characterised as a reaction to the immediate past. We did not accomplish a proper choice and a conscious restriction of the development programme within the limits of the country's possibilities in all spheres in the preceding period. An incomparably stronger emphasis was laid on building new factories than on modernising or supplementing the existing ones. On this background, a series of disproportions developed between different branches of industry. Our industry, composed of pre-war plants which were restored (often without any essential changes in their technical disposition) and of newly-built modern factories, represents a mosaic from the viewpoint of its technical level and degree of concentration. Whereas, already during the second Soviet five year plan, for example, new large plants played the decisive role. We have expanded our productive capacity

to an exceptionally high degree, considering that we have been investing in industry more or less the same percentage of our national income as other peoples' democracies, while disposing of industrial plants in the regained territories (those preserved or little damaged). At the same time, we suffered, however, exceptionally high losses from the war and occupation in technical and working class cadres; so that the youth— as yet without experience or tradition—constituted an exceedingly large proportion of our working class and directing personnel.

These heterogeneous factors have one characteristic in common. They greatly intensify the problems which are particularly difficult to solve on a central plane, which require the development of initiative from below, of economising in individual enterprises, of appropriate enterprise decisions. This state of affairs indicated that the factor of the scientific exploitation of the existing production aggregate was often more important for the economy than the expansion of productive capacity by means of new large investments—which required a high level of concentration.

It is therefore not accidental that problems of the enterprises, such as their autonomy, workers' councils, etc. assumed particular sharpness. But it would be a great mistake not to perceive that these questions will be on the order of the day (true, in other forms and other spheres) also in other socialist countires. Concrete enterprise problems are not always solved there under the general head of autonomy, and as a rule they see in someting else the chief problem of the given stage. This, however, does not prevent the frequent solution of certain enterprise problems with great boldness. In the USSR, for example, the right of the enterprises to utilise the planned wage fund is of exceptional importance, since savings in the wage fund are at the disposal of the plant. Many of the rights and tasks of our workers' councils devolve in the USSR upon the presidum of the production conference and the trade union organs. Let us hope that all socialist countries will advance much further than Poland in shifting heavy industry plants to local industry. Formally considered, this of course does not in itself mean the extension of enterprise autonomy, but it provides better opportunities for its development.

The process of altering the patterns of the socialist industrial structures is not completed anywhere. It is now possible to assert that the classical organisational pattern which prevailed in the USSR

for 20 years has nowhere remained without change. In the Soviet Union the creation of economic regions directed by economic councils within the framework of the general central plan—which is elaborated by the All-Union Planning Commission and realised jointly by an insignificant number of ministries—occupies central importance. The principle of territorial links is hence the fundamental principle of current organisation in the USSR.

The GDR (German Democratic Republic) has adopted 'ruling' planning commissions as its central 'step-ladder'—if we may put it so. The organisational link between enterprises is of a double character—organisations of branches of industry and territorial organisations. It seems that the role of central branch management—insofar as basic industry is concerned—will be greater than that of the provincial economic councils; there is nevertheless evident an attempt to go beyond the narrow centralised branch organisation.

The characteristic trait of the new Czechoslovak organisational approach is the consistent aim to avoid the excessive formation of top managing organisations by combining many plants—either in the form of trusts, of vertical concentrations, or by connecting with the leading large 'guiding' plants the smaller or technically weaker enterprises.

The Yugoslav objective of farreaching enterprise autonomy with a drastic and simultaneous modification of planning methods, aim at the complete elimination of planning commands and rely on incentives and similar instruments. In the first stages of the change they already envisaged loose enterprise—associating organs of the type of chambers of industry or of commerce. A new form appeared in later phases, namely, the voluntary economic association of production plants. The current phase is characterised by the further development of enterprise association—in a quantitative sense, and in the sense of the ever tightening relations between the associated plants. Still, it would be a mistake to consider the Yugoslav pattern as one of the total dispersion of enterprises. For the fact remains that the organisational units, combining ever more enterprises, emanate from the enterprises, that they are subject to control and are in great measure dependent upon the members of the association.

From the spring of 1956 enterprise autonomy was extended in Poland in legal sense with the establishment of workers' councils. Factually, this autonomy proved to be narrower than was intended

by the legislature. This resulted from the naturally incomplete adaptation of the inherited legislation and planning methods to the new legal status of the enterprises, and from the strained market which characterised the whole of 1957. At the turn of 1957–58 a number of new directives provided the previous formal decisions with a factual content (the first important step in decentralising investments, abolition of the system of credit norms, etc.). At the dawn of 1959 the basic reform in the shape of enterprise associations was brought to life and further matured.

Parallel conceptions of the organisation of supervising units were considered in theoretical discussions. Practice and objective factors showed that from the viewpoint of interested opinion the most frequent type is organisation on the branch of production level. Also permitted in special cases are institutions of many industrial enterprises, though as a rule, they consist of one enterprise institutions. Managements of multi-establishment enterprises group a number of such enterprises in such a way as not to harm their existing direct individualised contacts with the enterprises.

The organisational structure and prerogatives of the multi-establishment managements ought to vary in accordance with the character of given branches or groups of enterprises. The general tendency is to assign given functions to the lowest possible organisation—if possible to enterprises, next to the multi-establishment management groups, and only then, finally, to the ministerial level. It may be observed that definite statutes of individual multi-establishment management prerogatives will oscillate between the general coordination and control of limited spheres of financial means allocation, and the many-sided combination of the concerned enterprises. The mutual relations between the enterprises and multi-establishment managements will be regulated in the spirit of the principle that the greater the prerogatives of a given multi-establishment management in relation to the enterprise, the stronger will be the influence of the enterprise on the management. In this connection, a given share in the leadership of the multi-establishment enterprise management will fall to the board of establishment directors (with a consultative role in some spheres and a deciding role in others).

It may be stated—without losing sight of the very essential differences between individual countries—that the mosaic sketched above

of pattern solutions in the sphere of organising the socialist economy possesses certain common traits. The problem of enterprises is posed in many different ways but it is on the order of business in all countries. Considered in its formal-legal aspect, there are three possible conceptions of enterprise prerogatives: (1) an enterprise may possess only those rights which are expressly conceded by a given legislative act; (2) the enterprise's freedom of decision is complete, unless it is limited *expressis verbis*; and (3) where the limitation of enterprise freedom is an exception—even legally—and where normally the limitation of rights is expressed only in 'voluntary limitation'. The last is the Yugoslav conception, the second the Polish, while the first predominates in the other socialist countries, although perhaps not in a clear form. In practice this does not mean, however, that it is not possible to go relatively pretty far within the framework of the first conception, as within that of the second. Nor does it mean that life does not provide extra-legal ways of limiting enterprise autonomy while operating on the basis of the third conception. It would hence be unreasonable to strictly counterpose these three theses, although basic legal differences exist between them.

It is similar with the question of administrative organisations. It may be considered either as a rule applied almost without exceptions, as one with considerable exceptions, or as a departure from the rule. The last was the Yugoslav conception. Moreover, administrative organisation may be regarded either as emanating from the enterprises—as in Yugoslavia—or as a legal-public institution, as in the other countries. But the difference between the first and second formulae is of a formal character in relation to the problem of the enterprise influence over the multi-establishment enterprise managements. It is necessary, however, to acknowledge the tendency to give directing organisations an economic rather than an administrative character. It cannot be maintained, of course, that there has always been an adequate adaptation of the forms of industrial organisation to the objective conditions of the given country and to the given stage of its development; but such a tendency always existed. There has likewise always existed ever stronger evidence of the dangers of bureaucratisation of the economy and a growing appreciation of the importance of enterprise problems.

V. PLANNING

With some oversimplification, it is possible to characterise the traditional planning pattern, as one which, in an hierarchical fashion, may provide concrete figures for the tasks of even the lowest organisational unit. The characteristic feature of this planning method was an abundance of central plan indexes, which were applied on the basis of commands (with far from adequate incentives) as the fundamental manner of assigning the plan's tasks; and which treated 'secondary' plans (particularly branch and enterprise plans) as entirely subordinated to the central plans.

Of course the above statement refers to all problems embraced by the plan and to all shperes of economic life. This results from the monolithic character of the central plan[3] —if we can put it that way.

The historical source of this style of planning—as indicated above —revolves around the highly concentrated disposition of economic means and the centralisation of management. It is necessary to add to the above that the thesis, maintained for many years, to the effect that in a socialist economy a rise in purchasing power has to be preceded by an increase in the mass of goods, makes it practically impossible to extricate the economy from this state of affairs —even if that tendency actually existed. A constantly strained economy had to incline furiously toward centralised planning, a rise in the particularities of the central plan, separation, a rigid price policy, expansion of the variety of commands, etc.

Is it possible to replace the above with another—though equally monolithic—planning system which can be applied today to a socialist economy? I doubt it. To be sure, in order to acknowledge the Yugoslav system as monolithic, it would be necessary to maintain that all the exceptions from the rule, which applies to Yugoslav practice, are temporary in character. In that sense, only a system which the Yugoslav theoreticians regard as the end of development could be acknowledged as an homogeneous system. It can be said with the utmost simplification that such a system ought to consist of management exclusively by instruments which do not plan by command, or as the Yugoslavs say—by administrative methods. It follows

[3] Of course we are concerned here with a simplified picture. Thus, for example, the degree of planning the main link was particularly higher than of the secondary spheres or problems.

from this that the directing role of the plan should consist exclusively in creating conditions where independent decisions initiated by enterprises fully correspond with the general line of the plan.

If the actuality of Yugoslav planning does not fully correspond with the above modest assumption, it has nevertheless found a fairly farreaching expression. The centre of gravity in that planning system is financial planning, in a planned redistribution of social income by means of dividing enterprise income and budgetary sources, as well as by means of credit policy. The market acquires tremendous importance in that system. The enterprises have the right to, or even have to, proceed in agreement with market stimuli. If the results of this will not correspond with the provisions of the central plan, then this condition cannot be regarded as the fault of the enterprise but as a mistake of planning—which did not create a system of instruments and inducements in correspondence with enterprise decisions. The continued rather difficult economic situation in Yugoslavia (and other factors) has prevented the full realisation of these principles. Administrative intervention assumes either the form of price interference, of the distribution of imported raw materials, or of administrative forms of not banking part of investment credits. It can perhaps be stated that the possibilities of directing a central plan only by means of economic instruments and incentives, as well as the possibilities to establish a free market without disturbing the foundations of planned economy, have proven to be greater than the sceptics thought; but smaller than the creators of the Yugoslav pattern expected.

As concerns the historical sources of the Yugoslav system, they may be found in the reaction to the above-described particularly farreaching voluntarism of the first five year plan, the apprehension that even the best conceived act of administrative intervention will disturb the law of value, and the special anxiety for the development of initiative from below.

The differentiation of the pattern forms in the planning sphere is not limited today to the alternative between the traditional or Yugoslav patterns. On the contrary, new conceptions related to planning methods have appeared in each socialist country, and a number of these conceptions have already been applied in life. The process of change in the planning system follows a dissimilar course in individual countries; while the changes have a gradual

character at the same time. Under these conditions it does not seem possible to present a picture of achieved changes; but rather to sketch the cardinal problems, primarily on the basis of the discussions of this theme in Poland. It mainly concerns the following questions: (1) the 'useful' sphere of central planning, and in this connection, the question of the autonomy of 'subordinate' plans; (2) the principles of sparing commands and (3) the principles of 'asymmetrical' or varied solutions.

1. We are not interested in planning for the purpose of economic forecasting, nor as a 'staff drill' preparatory for the emergency intervention in economic life. With us planning has the task of directing the entire economy in an efficacious manner.

The useful sphere may easily be defined in respect of extreme cases. It is clear, for example, that such a collective order of priorities as the conscious limitation of the consumers' free choice, a lower or higher scale of investment distribution in the national income, or the scale of armaments can only find expression on the plane of central planning. Conversely, decisions which do not entail any element of choice and may be delineated by means of an economic accounting based on data from 'without'—are undoubtedly outside the sphere of usefulness of central planning. Unfortunately, the situation is comparatively clear only in relation to extreme cases. Which is—and which is not—a macro-decision of fundamental importance? What shall be done in cases where the accounting element is preponderant, but in which an element of choice not motivated by accounting, is also expressed?

It seems correct to lean upon the very modest, but nonetheless important considerations, that the number of decisions made by any planning organ naturally affects their quality, and that even when proper conditions exist for appropriate decisions, the conditions for their transmission are not always proper. So that the very confirmation that centralised planning would be desirable in regard to any problems or spheres cannot be the basis for defining the usefulness sphere of planning. It therefore can be demonstrated when the total number of decisions conceived by central organs cross the threshold beyond which the opportunities for 'good work' diminish or disappear. It may also occur that an increase in positive opportunities for appropriate decisions made on the level of central planning, will be outweighed by negative ones in the shape of

weakening the chances for skilful demonstration and achievement.

It is hence possible to state—not on the basis of some absolute principles, but only as a tendency—that the central planning range should be wide enough to comprise (a) all macro-decisions of a general scope, and (b) those choices of a narrower scope where the long range anticipation of the direction of development of the entire economy (basic investments, for example) plays a special role, for lack of accounting elements. However, to entrust the central planning organs with everything that may be resolved exclusively on an accounting basis (resting on market data or on earlier central plan decisions), is to overstep the usefulness sphere of that planning.

The adopted principles of secondary plan, and primarily of enterprise plans autonomy, logically resulted from that conception in the sense of leaving to these plans the full solutions of some problems.

2. Planned management cannot dispense with applying commands. Even capitalism does not shun commands in given spheres. The relations of concerns to their constituent parts do not rest on incentives but on orders. In planned economies it is better to use commands publicly, without the seeming operation of economic mechanisms where command is really in force (as often appears in the Yugoslave system). But it does not follow from this that command is the happiest way to assign planned tasks.

A further argument for contracting the system of commands is their absolute character from which results the impossibility of any comparative breakdown between tasks of particular indexes. In the case of several parallel orders directed to the same enterprise, relating to diverse but connected problems, the only happy situation may be that of complete inner harmony. For lack of such harmony, management by command either leads to an arbitrary (or spontaneous) choice by the enterprise, or else to an acknowledgement in practice that one of the indexes of command is more important than all the others; though formally they should all be equally obligatory.

3. Just as it is necessary to consider individual production branches broadly and deeply in the sphere of organisation, so is it indispensable to take completely into account the specific characteristics of individual problems in the sphere of planning tasks. Planning pro-

duction is, for example, an incomparably more precise activity than planning investment. Besides, in the first of the above tasks, at least concerning consumers' goods (and with the reservation of relative market equilibrium), the market—with which the enterprise is in closer contact than the planning organ—supplies the most important and valuable indexes. Conversely, for every large investment the long range anticipation has greater significance than the actual state of the market. The central planning organs are better equipped for understanding that whole synthesis than are the enterprises.

But within the investment task it is necessary to differentiate problems of different characters. Complementary modernisation investments certainly 'feel better' within the framework of a decentralised system. What was said above regarding central investment planning, applies also to the building of new plants. Besides, fairly precise calculation formulae have to be created for certain tasks—for example, for comparing the effectiveness of different technical variants of the same investment. And that problem does not have to be and should not be considered on a fairly high level. The matter is of course different when the investment problem is related to a notably long range direction of development.

Similar argumentation may be advanced not only in relation to the question of centralisation but also in respect to the problems of planning methodology. However considered, sometimes a general economic analysis, or even great practical experience serve as the best bases for making decisions; often a questionnaire or even only precise statistics may provide such a suitable basis. Frequently a true estimate is possible in spheres where statistics are distorted, where they do not provide a true picture of reality. All this leads to the adoption of the thesis of 'asymmetry' in the conception of individual problems and from the methodological and organisational viewpoints.

The questions discussed above characterise the main currents of planning problems but do not exhaust them. Among other themes, it is first of all necessary to adopt the important conception, already realised in Czechoslovakia, to the effect that enterprise plans should not be based on yearly but on five year national plans. It is perhaps superfluous to indicate that we are concerned here with something more than a technical grasp. Involved here is the road to the greater

stabilisation of the enterprises' working conditions and expansion of the time horizons of the planners in the enterprises.

VI. CONCLUSIONS

In developing the problem of socialist economic patterns, this article strongly emphasised the historical peculiarities and specific characteristic of individual countries as the sources of differing patterns. It aimed at the same time to strongly underline the differentiation of pattern forms in individual spheres. I can admit my apprehension that certain dangers are connected with that manner of placing the question, from which I sought to protect myself.

First of all, if an *organic* connection exists between the process of development of productive power and the historic-geographic conditions of individual countries on the one hand, and the pattern forms on the other—this would not mean that the connection is *simple*. What is more, I think that other, un-analysed factors also play a role in determining pattern differentiation. Every historical process is a function of many factors and a complete analysis of the mechanism of pattern changes would certainly also require, for example, consideration of the development of theoretical thought in the socialist camp, as well as broad political problems—beginning with the question of the maturing socialist consciousness among the masses, and concluding with the development of the international situation.

Since it is impossible to discuss all these elements, I shall take up briefly only one of them, namely, the development of theoretical thought in the sphere of planning. The emergence of the system of planned economy created a mechanistic break through and at the same time a minimum of views, the essential content of which was the identification of socialist planning with forecast-plans. It is necessary to state that certain leading planning theoreticians—such as Strumilin, for example—tried even at that time to guard themselves from the reverse mistake, namely, overrating also the limit to a free planning choice, as a sphere of maturing, scientifically elaborated planning method. In the course of further development there took place—as I think—the overrating of these elements on the theoretical as well as on the practical plane. On the latter plane, many economic plans in the past period found expression in voluntarism or

subjectivism. A certain type of fetishism ensued in the theoretical sphere in respect of certain assumptions, having a great but relative importance, which raised certain very long-range tendencies to the level of a series of absolute principles, suitable at all times and in all situations.

The phase we are going through now is, in my opinion, one of differentiation between the lasting achievements of planning theory and accidental eruptions. Although this phase proceeds differently in individual countries, I believe that such is the general trait of the current phase of development of theoretical thought in the sphere of planning. I also believe in the great fruitfulness of this phase since the experiences we can utilise are rich and varied.

The second problem, which seems to me necessary to touch on in conclusion, is that of the inter-connection between individual pattern forms. Speaking separately about pattern forms in individual spheres, it is possible to involuntarily create the impression that certain of these forms may be combined *arbitrarily*. But that certainly is not so. There are connections between individual spheres but a certain direction of evolution in some spheres and a contrary direction in others is unthinkable. Individual pattern forms are parts of a greater whole — of the general economic pattern, which must constitute a harmonious ensemble of consistent methods of management and planning. On the other hand, if *arbitrary* combinations are excluded, that does not mean that there does not exist any freedom of manoeuvre, that internal logic may be attained only in monopolist systems, ensuing from the so-called iron consequences of the very same principle for all spheres and problems. There may be very many pattern variants. In that sense, I have a negative position to attempts — however interesting — which lead, in my opinion, to a simplification of the question by counterposing some two patterns as pure, while considering other patterns as 'mixed'.

Is it necessary, all the same, to give up all attempts at classifying patterns? Certainly not. It is only necessary to remember that differently shaped existing and possible patterns cannot be placed along a straight line connecting two extremely representative points of a pure pattern. It would perhaps be possible to rather speak of an eliptical plane of two focuses, or even better, of some very complicated three-dimensional geometric forms.

There is no reason to suppose that the creative power in the sphere

of socialist economic patterns will not lead us much further beyond that we know today. Technological changes may create new problems and unravel existing ones. The maturing of socialist consciousness among the masses will of course bring new elements. This is why it is not necessary, in my opinion, to advance premature generalisations and classifications. We can, however, say unconditionally today that there has been for several years an intensive process of pattern differentiation, and that a key role is being played in this process by the problems mentioned above, namely, enterprise autonomy, the sphere of central planning, commandism, incentives, etc.

It may be affirmed, in a deep sense, that we are concerned here in great measure with technical-organisational or methodological problems; but it is also true, that to a great extent, two fundamental questions are also involved. These are, the role of economic law in socialist economy and the role of the human factor in the economic system. And this is why even the most efficacious changes of the pattern cannot of themselves effect a turning point. Nor can they, in any case, replace hard daily exertion. They do not err, who, in the problem of rebuilding the pattern, see the great tasks of socialism.

8

REMARKS ON THE PROBLEMS OF MARGINAL ACCOUNTING IN SOCIALIST ECONOMY*

Wlodzimierz Brus

THE PRINCIPLE HAS GENERALLY PREVAILED up to now in the literature of socialist countries—and primarily in Soviet literature—that the first element of prices, namely costs, are determined as the branch averages of the total production costs. The main controversial question relates to the manner of considering the surplus product gained by accumulation: in connection with living labour input (the conception of prices approaching values) or in relation to the general range of fixed and circulating means utilised in the production of given goods (a conception analogous to prices of production). In this connection there has also been under discussion the problem of the so-called two-or one-level prices of means of production and consumption goods (accumulation principally by way of means of consumption prices, or a more or less proportionate spread between means of production and consumption goods).

The theses on the *principle of price formation* at the discussions of the Economic Council[1] presented different conceptions. Their basis was the confirmation of the necessity to consider the differences in the costs magnitude of a given product in different enterprises, resulting from varied objective conditions of production. In such cases, the total production of the given product (within the limits of demand) may be divided into several groups according to the rise in their cost level—with the assumption that each group embraces an essential part of total production. Three groups were

* The article which follows appeared in No. 3 of the journal *Ekonomista*, 1958, as a condensed form of my study entitled 'Some Problems of Price Theory in Socialist Economy', included in the original Polish edition of this Volume.

[1] The theses were published in a collection of articles entitled 'Controversy Over Prices', Warsaw, 1958.

accepted as a basis for the division: the 'cheapest', the 'medium' and the 'dearest' products.

The theses introduced the conception of 'starting point prices' as the calculated magnitudes serving as take-off bases for price formation and as links with the products' own costs. The products' real prices, particularly of articles sold outside the state sector, will diverge from starting point prices as a result of market conditions and political-economic preferences. The chief problem in relation to starting point prices that the theses attempted to solve was which costs they ought to rest on.

The solution arrived at was that *price formation should correspond to the relation of the average variable costs in the group of 'dearest' products.* The argumentation behind this may be reduced to the following points:

(1) In the formation of a price system actually functioning in the economy, it is necessary to consider the so-called short range conditions in which the production apparatus (engaging the objects commissioned during the obligatory period of the price system) is basically given.

(2) The price system should be so constructed as to give buyers a true criterion for a choice between corresponding amounts of individual products. Quantitative relations corresponding to the possibilities of substitute production in the national economy must therefore be taken as the point of departure for price formation.

(3) The substitution of one product from total production for the total production of another cannot ensue in the short range. There is no real alternative choice between production A or product B, or between more of product A, less of product B, or conversely. Basing price formation on average production cost relations of total production, or on the cost relations of enterprises producing the basic mass of products would not reflect the real transposition relation under these conditions. Since the scale of transposition embraces only part of the products, substitution relations are better reflected in the cost relations of the 'dearer' group of products A and B. Savings in the consumption of units A means for the economy a release not of average cost outlays but of outlays in the extreme groups. The transposition of consumption from A to B frees the national economy not from out-

lays on average units A, but on the dearer ones—burdening it with a change in outlays for the production of the dear units B.

The conclusion with regards to the necessity of adopting starting point prices to the relation of average variable costs in the group of 'dearer' products is based on the above briefly presented premises. In cases where the product is produced in a single enterprise, or where the level of variable costs is the same in different enterprises producing the same product, the basis for determining starting point prices are of course the average variable costs of total production.

As can be seen, the theses do not formulate bases either for the equalisation of prices and average variable costs in the 'dearer' group of products; or for the proportionality of prices with the average variable costs in the same product group. This results from the assumption that prices should cover both variable and constant costs. The reconciliation of the postulate of price formation on the basis of variable cost relations with that of assuring that prices cover constant costs (and eventually a certain part of accumulation) should be attained by increasing the average production costs and sales of the 'dearer' group of products with 'a percentage price supplement uniform for the whole economy.' This supplement should be fixed so as 'to cover the constant costs of production, in percentages of the fixed and circulating capital utilised; and in order to ensure a profit. Thus calculated, starting point prices remain in a constant relation with the variable costs of 'dear' enterprises.[2] The proposed construction of starting point prices may hence be expressed in the following formula:

$$\left[p = k_z + N\frac{k_z}{K_z}\right]$$

p — prices
k_z — average variable costs of production units in the 'dear group of products
K_z — the general sum of variable costs in the economy (calculated according to the variable costs of the 'dearest' products)
N — the total sum of price supplements.

The construction of the price supplements on variable costs

[2] Thesis on the 'Principles of Price Formation' (*op. cit.*).

is one of the most controversial elements of the 'starting point price' conception. Its solution, however, falls beyond the scope of this article.

* * *

A very important theoretical problem arises: if and to what extent can the proposed conception be acknowledged in attempts to apply the category of marginal costs for the solution of price problems in socialist economy?

We have to do here, it seems, with elements of marginal accounting. As a basis for starting point prices it is proposed to take the magnitude determined by marginal conditions of productions, not the average magnitude of the entire mass produced. Grouping production in a series according to the volume of costs is connected with the understanding characteristic of the marginal conception regarding the functional dependence between a production increase and rise in costs. In this connection there is a difference between constant costs—not connected with the dimensions of production—and variable costs, which depend upon the production range, or (broadening the question) current costs in distinction to past costs, which are already sustained.

On the other hand, however, the conception presented in the theses clearly deviates from the typical marginal version.

The first difference consists in abandoning the viewpoint of a single enterprise and adopting the argumentation to a national economic scale. The total production of the given product is considered. The dependence between the unit cost levels and the production range is analysed within the framework of production branches and not of single enterprises. That conception is also independent of the given shape of the enterprise's internal cost curve, and is hence not connected with the generally known law of diminishing returns—which excludes any rise in unit costs from a certain point. This fact helps to generally determine if there are continued attempts to elevate the law of diminishing returns to the level of a universal, basic economic phenomenon; or, as is the case with some economists, if there is a rejection of the very thesis of embracing that law. But this position may perhaps facilitate the tasks of the critic, but it by no means contributes to a proper discussion.

The theses actually omit the concrete shape of the cost curves

in individual enterprises (which in practice may be very very different depending on conditions), and operate with the category of average variable costs for groups of products of single or several enterprises, depending on the divisions of total production. The difference between average and marginal branch costs is the result of the existence of enterprises with *varying objective conditions of production* within the framework of production branches (chiefly, different levels of technical equipment) and is not the effect of adopting a supposition of the inevitability of a rise in costs in measure with a production increase on the same technical basis.

The rise in enterprise costs may be disproportional (higher or lower) or proportional in relation to the production increase. But if there is an objective difference in the cost level between enterprises producing the same article, and if the volume of demand requires utilisation not only of the most efficient but also of less efficient enterprises (or groups of enterprises), then branch costs—according to the theses—may be presented as a rising function of the size of total production. Besides, there will appear here a discontinuous function, and its graphic expression will not be an elegant curve—so dear to the hearts of mathematicians—but the most ordinary broken line proceeding in a drunken zig-zag from one level to another.

This involves the question of apportioning the changes in costs. The marginal costs theory operates with an infinite number of small increases and in practical application attempts to reach at least an approximation to the costs of the 'final units'; whereas the theses advance the conception of a broad division embracing an appreciable part of total production. A proper constancy of average unit costs is assumed within the broad division, considering only the difference between divisions. This is of great importance for eliminating accidental factors (for example, particularly high costs of non-typical enterprises producing an insignificant part of total production) and it facilitates the relative stabilisation of dimensions which serve as the basis for determining 'starting point' prices. It may therefore appear to beg the argument to point out that the theses make the whole mass of products dependent on small margin costs, that prices resting upon such a concept of marginal costs will be subject to continuous fluctuations, that the possible scale of transposing production exceeds the defined

division, etc. It is of course necessary to reckon with the fact that a fairly large division will to a certain extent deform the accounting. Perhaps the size of the division should be varied for individual branches, in accordance with the real possibilities for transposing production. But we will come to this later. For the present we are concerned only with ascertaining that at this point it is also not possible to identify the conceptions expressed in the theses with a text-book notion of the marginal cost theory.

The differences are therefore important. Their scope and character, I believe, are not expressed in the formulated document which emphasises only the practical source of the differences. Thus it states[3]:

> Since the calculation of starting point prices on the basis of accurately computed marginal costs is impossible in practice, therefore the principles (mentioned above) were adopted for computing starting point prices. The average variable costs in the group of 'dear' enterprises is the practical approach to the category of marginal costs, which is adequate for the requirements of price policy.

It seems to me that what is actually involved here is not only—and not so much—a question of a practical compromise, but a basic matter of principle, both from the general-theoretical viewpoint (for example, the shape of the cost curve) as well as in relation to the specific characteristics of a socialist economic system. We deal below with this last, particularly important question.

How then shall we classify the conceptions presented in the theses? I do not think there is any need to bother with complicated terminological controversies, nor to try by all means to avoid certain definitions only to be able to shock someone with the sound of his own voice. A large enough number of considerations justify defining the term 'marginal costs' on the same basis as the theses propose for starting point prices. It is worth remembering at the same time that we use this term to some extent in a conventional sense; while the content of the concept 'average variable costs in the group of dearer products' differs in many essential points, from the category of marginal costs in the generally accepted sense. Anyone malicious might even set about solving the striking

[3] *Ibid.*

problem—who offends more the conception of the theses, the sworn partisans of average costs or the advocates of marginal costs?

* * *

The question arises in connection with the conceptions adopted by the theses: what relation has this idea of marginal magnitude accounting with the Marxian theory of value? This is an important problem from the viewpoint of analysing the usefulness of the marginal costs conception in socialist economy, as well as in relation to the still continuing, and at times even deepening general theoretical misunderstanding.

The first misunderstanding, I think, consists in the identification of marginal accounting with a subjective value theory, which is undoubtedly in opposition to Marxian economics. True marginal accounting emerged and developed in its time on the basis of the theory of marginal utility. This does not mean, however, that it is indissolubly tied to it, that it is not possible to make use of marginal magnitudes on the basis of an objective value theory. To follow a Marxist course we would have to differentiate between qualitative problems relating to the essence of economic categories from problems concerning the qualitative determination of the given categories. Value is labour coagulated in commodities—its determination marks the dividing line among Marxists, between the advocates of an objective value theory, resting on labour, and the spokesmen of a subjective value theory who attempt to base the answer to the question 'what is value', on the conception of utilising different variants. But the viewpoint on the question of the content of the 'value' category by no means prejudices the position on the question of the factors determining the magnitudes of value—of establishing the quantitative proportions at which one commodity is exchanged for another. We know that only 'that which determines the magnitude of the value of any article is the amount of labour socially necessary, or the labour-time socially necessary for its production', and that 'the value of one commodity is to the value of any other, as the labour-time necessary for the production of the one is to that necessary for the production of the other'.[4] But how do we determine the socially necessary labour-time? Shall it be determined as the amount of time necessary under given conditions to produce average units of the whole

[4] Karl Marx, *Capital*. Vol. I (Kerr edn. Chicago, 1906), p. 46.

mass of products, or as the amount necessary to produce marginal portions, or perhaps in some other way? The answer to this question is all the more complicated since from the highly abstracted concept of 'value', used in the first volume of *Capital*, we proceed to the more concrete concept of Volume III, namely, 'market value'—with the existence in this concept of varying individual values in the same commodities as well as mutual interrelations of production and market factors. It may moreover be incorrect in general to place the question in a categoric form, instead of formulating it as follows: under what social conditions is the necessary labour-input determined by the average magnitude, and in which by marginal? Different answers to this question may pretend to be legitimate. But it is always necessary to take the fact into account that these questions are on a different plane, than that of a controversy among the partisans of the Marxist theory of value and the upholders of the marginal utility theory. The position that the magnitude of market value is determined—in given conditions—not by average, but by marginal material inputs—of living labour and labour materialised in means of production—has nothing in common with subjectivism in value theory. And this was asserted by none other than Karl Marx himself.

If one has to necessarily search in the past for affinities of the marginal costs concepts contained in the theses, then it seems to me that we would discover the closest analogy in the Marxian concept of the value magnitudes of agricultural products in relation to the theory of ground rent.

As is known, the market values of agricultural products (values, not prices; since the latter fluctuate around values under the influence of oscillations in the market conjuncture) are determined, according to Marx, by production conditions on the least fertile land, which mark out in this manner the socially necessary labour-time required for the production of product units. Of course, this does not pertain to the absolutely worst parcels of land, but the worst of those which are still necessary to satisfy the social demand. It is precisely in relation to the theory of ground rent and products that Marx developed the second side of the socially necessary labour-time concept. He pointed out that what is involved here is not only the necessary labour-time input per unit

of product, but also of the total sum of the labour-time necessary to produce the whole mass of products of a given type, in correspondence with social demand.[5] Hence in certain conditions the value magnitude of products may be indicated not by average but by marginal quantities. The determining role of marginal magnitudes is not something accidental, but conforms with the entire disposition of objective economic circumstances, and hence in a certain sense, also with the production conditions on medium and fine parcels of land. Designating the worst (regulating) parcel by A, and by B, C, and D, in succession the constantly better parcels, Marx wrote: '... the price of the grain produced on the best soil is a regulating one to the extent that it depends upon the quantity produced on such soil in what measure the soil of class A is the regulator.'[6] Thus, the fact that the cost of production on land A regulates the market value of the entire product indicates that in order to satisfy demand, production must attain a range in which the input on land A is considered socially necessary.

The growth of production or decline of demand may limit the indispensable input only to land B; while the production costs on B—again not average but marginal—represent the socially necessary magnitude. An analysis of the determination of the value magnitudes of agricultural products proves beyond doubt that the socially necessary input conception is by no means always covered by the average input concept, and that in given conditions —in complete agreement with the Marxian value theory—the marginal are the socially necessary inputs.

The great service rendered by Marx to the theory of ground rent, as is known, consists in his proving the groundlessness of Ricardo's viewpoint that differential rent arises from the passing over from better to worse land—which theory expresses the operation of the law of diminishing returns on a historical scale. Marx showed that the existence and range of rent do not revolve around the direction of passing over from one to another grade, which may vary—from better to worse, or vice versa—but only from the appearance of objectively conditioned differences between the results of equal labour and capital inputs. However, at every

[5] *Ibid.*, Vol. III, p. 746.
[6] *Ibid.*, p. 770.

moment, the disposition of production conditions may be arranged in the order of succession according to the declining magnitude of rent, i.e., according to rising costs, regardless of how the disposition of production conditions arose.[7] Hence the acknowledgement that the relatively worst production conditions regulate the magnitude of value in certain circumstances, must by no means be connected with the so-called appearance of a universal law of diminishing returns in the ranks of believers.

It is furthermore characteristic that Marx took into consideration the related differences in input effectiveness on different parcels of land. Even in differential rent II, which is concerned with the effectiveness of successive inputs in the same soil, Marx formulates the conclusion that the differences between the regulating production costs and the *average* costs on the given parcels are significant for the rent magnitude, although behind these average costs may be concealed varying effects of different successive labour and capital inputs.[8]

It seems in relation to all the above, that the Marxian theory of value does not imply a thesis of the absolute equality of the sums of values and sums of living and materialised labour inputs. The sum of market values of agricultural products is greater than the sum of inputs in their production, since the magnitude of value is determined by the socially necessary labour expenditure in the worst (though still socially necessary) production conditions. The difference between these two magnitudes is what Marx called 'a false social value.'[9] And if only the sum of market values of agricultural products exceeds the sum of labour inputs, then—although in all the remaining departments of material production the sums of market values and labour inputs cover each other—the total sum of values in the whole economy is greater than the total sum of labour inputs.

I recall these well known questions certainly not for the purpose of proving on their basis one or another proposition in relation to our economy. I am only concerned with establishing the baselessness of the assertion that the application of marginal magnitudes, in accounting is itself in contradiction with the Marxian theory

[7] *Ibia.*
[8] *Ibid.*, pp. 843-44.
[9] *Ibid.*, p. 773.

of value. As we saw, Marx under certain conditions did not hesitate to use marginal magnitudes.

Are such 'given conditions', however, limited solely to the sphere of agricultural production, and do they result exclusively from natural factors which play such a great role in agriculture? For it is indeed known that insofar as industry is concerned, Marx considered that the necessary social outlay is expressed in average and not in marginal inputs.

Let us return for a moment to *Capital*. Despite the many ambiguities characterising Chapter X of Volume III of *Capital*, it is clear that in Marx's conception, market value magnitudes are determined primarily by the average input per production unit on the scale of entire branches of production. Moreover, the controversy whether it must be the mathematical average of important inputs in different groups, or simply unit inputs in enterprises producing the overwhelming portion of the total mass of products is not important. From a theoretical viewpoint there is no difference between these definitions, which the author of *Capital* anyway used interchangeably. Marx did not really exclude the possibility of regulating market value by means of inputs in extreme groups. He examined the problem of the relation between market values and the disposition of supply and demand only where the regulators were inputs in extreme groups, treated as exceptional and unstable cases.

What is the source of solutions of the problem of socially necessary inputs which are different than in agriculture? It is simply the fact that with the assumption of free competition, industry does not possess the factors which could constitute insurmountable obstacles to the expression of tendencies to equalise the objective conditions of production in different enterprises. For there exists the free flow of capital from branch to branch and enterprise to enterprise, without obstacles to the application of technical innovations, etc. This does not mean that all differences between the most efficient, average-efficient and less efficient enterprises disappear—and hence that there are no extraordinary profits in the first group, and profits lower than the average or even losses in the third group. But competition acts continuously toward equalisation and results in the overwhelming portion of the total mass of products approaching average conditions. There are no

lasting rules according to which demand could not be satisfied with prices corresponding to the costs of enterprises producing under average conditions. Enterprises which cannot adapt themselves to these conditions have no pretensions to prices corresponding to their individual costs; they do not realise part of the surplus value and may even sustain losses. And if this condition prevails over a long period, they may even have to disappear from the scene.

Average input hence regulates market value, when as a result of free competition, greater differences are maintained than are substantiated by objective causes.

A basically analogical conclusion is provided by another manner of analysing marginal equilibrium conditions with the assumption of perfect competition. As is known, at the point of equilibrium (of branches) marginal costs—according to these theories—are covered by the minimum average costs, equalising at the same time with prices.

It is clearly not a matter here of any analogy between the general conceptions of the problems of value in Marxist theory and marginal viewpoints on the essence of value, source of profit, etc. but only of the confirmation that with the assumption of perfect competition, operating with marginal magnitudes definitely leads also to the acknowledgement of the regulating role of average costs. Hence in that sense, as concerns the problem which input is the axis of price gravitation—average or marginal—the controversy is purposeless. Of course, perfect competition is a pure abstraction which does not exist in practice. However, the conditions in which Marx examined the process of formation of market values and production prices, represented a certain approach to the assumption of perfect competition. We do not find in *Capital* a discussion of some quite abstract assumptions of a thesis regarding marginal costs covering average costs at equilibrium points, but a very realistic picture of a constant tendency in that direction. This means in practice that at every moment (except for particular cases) the overwhelming portion of total production is concentrated around average conditions.

The bases for the different conceptions in *Capital* with regards to the problems of value and price magnitudes in industry in contradistinction to those of agriculture, may therefore be pre-

sented in a very general way which is not limited exclusively to natural factors. *Most generally considered, the different concepts result from the basic distinctions between the spheres where free competition is in operation and those, where due to objective causes, the mechanism of free competition either does not function, or works on a limited scale.*

* * *

The conclusion advanced in the above consideration is of real importance in evaluating the usefulness of the conception formulated in the theses. For, it follows from the above that such an evaluation requires, among other things, an examination of the problem to what extent the socialist economic system is favourable for the equalisation of objective production conditions between individual enterprises and production branches; or, on the contrary, in what measure their differentiation may be induced. The answer to this question cannot be deduced in a completely uniform manner, since the course of some economic processes depends to a certain extent on the accepted pattern considerations. A general examination of the question is, however, possible and ought to be adequate to the aims we set ourselves here.

There are highly differing viewpoints on the scope of enterprise autonomy that can be regarded as the optimum in a socialist economy. However, the theses do not question the fact that enterprise autonomy should be greater in the current management of production than in the investment sphere. Decisions regarding the investment volume, the allocation of the accumulation fund to investment and other elements of expanded reproduction, and—in this connection—decisions pertaining to the investment structure and those of a similar type in a socialist system cannot but be made on a central level—which rests upon an economic accounting on the scale of the entire economy. The centralised disposition of the overwhelming portion of the accumulation fund is an inseparable consequence of the social ownership of the main means of production.

This means that the main current of the investment process does not flow in the direction of self-financing by the enterprises and branches, nor by way of the free flow of means between enterprises and branches; but on the basis of the planned distribution of the funds of centralised means.

But does this fact in itself solve our problem? The following

objection may be raised here—it is true that in a socialist economy the investment process does not flow by itself under the influence of the market mechanism and competition, but is directed by the central planning boards. But this nevertheless does not mean that the planning board decisions must lead to a different distribution of the accumulation fund than that which is shaped by the market influences. What is more, views have appeared which maintain that the superiority of the socialist economy consists precisely in the fact that owing to centralised redistribution, investment means are divided in a manner more closely approaching an ideal model of perfect competition than could be attained by the real market mechanism. It seems that such is the sense, for example, of the thesis many times formulated in the writings of Professor Wakar to the effect that 'the plan has to be drawn up as if it were in the name of independent enterprises.'

It is hard to acknowledge the accuracy of this kind of conception of the role of central plans, particularly in relation to investments. The overwhelming portion of the investment fund is concentrated on the central level, not in order to achieve the same distribution as would result from the ideal operation of the market mechanism; but in order to attain the maximum advantages for the national economy as a whole—which is by no means one and the same thing. The application of criteria which are represented as operating like the unrestrained competition mechanism would certainly lead to a high proportionality of the distribution of means. Only there is no such proportionality, and it is not always rational in any case. The concentration of means in different periods on different sectors—hence, the dispersion of means—give many times better results from the viewpoint of the rate of growth of the national income as well as from the point of view of proportionality of development than an equal distribution.

Of course, the viewpoint would be mistaken that a socialist economy should eliminate every effect of market conditions on the investment process, and—in that connection—every decentralised flow of means. First, market conditions should appertain to an ensemble of elements on which basis the central disposing agency undertakes decisions. Secondly, evidence shows that enterprises and branches must have the right to effect decentralised investments in certain spheres. This is all indispensable and really

requires deepening the forms of an elastic system without encroaching, however, upon the cardinal principles which flow from the socialist character of the economy.

It seems therefore possible to state that a socialist economic system creates different conditions than those on which Marx based his analysis of the formation of market values in Chapter X of Volume III of *Capital*. The high selectivity of the distribution of investment means results in the differences of the technical levels between individual branches and enterprises being often more distinct and lasting than in a competitive economy. It is therefore by no means abnormal that in a socialist economy the same product may be produced in a given period in enterprises with different levels of efficiency, and with the greatest portion of the products not being concentrated in average enterprises. Moreover, whereas under capitalism, enterprises 'guilty' of producing in below average conditions are 'punished' by lower profits or even with losses, in a socialist economy these matters do not depend on the enterprises basically, but are determined objectively by the needs of economic development.[10]

If objective factors induce the production of an essential part of the products necessary to cover demand under worse than average conditions, then to ignore this fact in resolving the problem of fixing starting point prices would be in contradiction with the principles of economic accounting. This accounting must consider the magnitude being approached by unit input, when production reaches the dimensions indispensable for the satisfaction of effective demand. This input—if we ignore accidental magnitudes relating to insignificant portions of total production—has a socially necessary character in a sense analogous to Marx's conception in analysing the values of agricultural products. In this connection, the input must be covered by society. This results from the correctness of the socialist economic structure.

Referring back to the Marxian analysis of the market value of agricultural products in solving the problems of price formation in a socialist economy sometimes induces an opposite reflex. This

[10] I assume that the decisions regarding the distribution of investment means are rational. I also establish that the production potentials of enterprises are utilised to the maximum, and therefore omit the so-called subjective differences in cost levels.

is based on the false impression which attributes to socialism characteristics proper to backward production spheres. This is of course a misunderstanding. For in essence, the matter involves not the highest or lowest absolute levels of development, but the relatively constant, objectively conditioned differentiation of levels among enterprises. Such differentiation may appear at each level. It may likewise be a good result of the need to maintain in an active state the most obsolete enterprises, as well as the effect of building new ones which are far advanced in comparison with the old enterprises. I have attempted to show that the greater developmental differentiation of individual branches and enterprises in a socialist economy is not evidence of backwardness, but on the contrary, flows from the same source which determines the tremendous dynamism of that economy. Parallel with agriculture, there is involved only the question of eliminating or limiting the competion mechanism, creating a lasting movement in the direction of equalising the objective production conditions. It does not, however, involve the motive which is entirely different in the considered cases.

Does this mean that the conditions for the production of the same product are always differentiated in socialist economy? Certainly not. It is even possible to show a condition chracteristic of socialism which counteracts differentiation. That is the specialisation of production—more advanced than under capitalism—which leads to the production of many products (particularly in the machine building industry) only in single factories. We must also consider the cases where different enterprises producing the same product have identical, or almost identical production conditions. However, the fact that in a socialist economy, besides the articles produced under varying conditions, there are also those produced in identical conditions or only in single enterprises, does not solve the problems advanced in the theses. The relation of average variable costs in the 'dearest' group of products would lose its significance only when average costs and marginal costs—defined in that manner—cover each other in every case; or also when the average costs of all products would stand in the same relation to each other as their marginal costs. There is perhaps no need to prove the unreal nature of these hypotheses.

Sometimes the argument is advanced against basing the system

of starting point prices on the marginal cost relations, that the application of marginal accounting leads to non-equivalent exchanges. For, if the spread between the marginal and average costs in production A is greater than in production B, then the branch producing A will gain a greater value than B in relation to the sum of inputs.

Without entering into a complicated treatment of the theme of the nature of equivalence, it is necessary to state that in any case this argument has almost no significance for a socialist economy. Quasi-profit[11] here is social property, however, and its disposal by no means is decided by the fact that it was earned in one or another branch or enterprise. The state may contract quasi-profits altogether. And if some part of it should remain, then it is fixed in relation to determined social priorities.

Hence it appears, that not a solution detached from the true foundations of production relations, but the very analysis of the conditions created by a socialist economic system justify the need for applying specific forms of marginal accounting. For, in a socialist economy there appear on one hand, in a certain sense, confirmed differences in production costs between enterprises (in a given period), while there exists on the other hand, the need for society covering the costs of all enterprises whose production is acknowledged as necessary (an external expression of this is the inclusion of enterprises with different efficiencies in plans). In these circumstances, an accounting based on the average outlays in obtaining the whole mass of products of a given type, is not adequate. This is so since the average blots out the dependence between the rise of inputs and the growth of production on a branch scale; whereas, consideration of this dependence and its closest possible inclusion in accounting constitute absolute conditions for minimising the total social labour inputs indispensable to attain the anticipated results. In general there is no doubt among economists about the efficacy of basing the economic accounting in the power industry on the dependence between an increase in production and rise in costs. It is considered proper not to smother cost accounting in general averages, but to calculate the separate costs for each

[11] This became a customary term during discussions to determine the differences between production values in prices based on marginal and total costs. Although in economic literature, particularly in Marshall, it has been used in a somewhat different sense.

of the basic divisions of the cost curve, if together with the rise in the use of power the necessity arises of utilising ever less efficient power plants. I do not see anything to contradict the application of this accounting principle to other branches.

Let us take, for example, two articles, both of which are produced in three groups of enterprises :

	I		II		III		Total	
	amount	*unit cost*	*amount*	*unit cost*	*amount*	*unit cost*	*amount*	*average cost*
Article A	1000	100	1000	100	1000	100	3000	100
Article B	1000	80	1000	100	1000	120	3000	100

Average unit costs are equal in both cases. Is it possible, however, to be satisfied with this general consideration and to ignore the different proportions between the production increase and rise in costs in each individual case? Decidedly not.

If the total demand for articles A and B can be limited to 5000 units, then production may be given up in group III enterprises of branch B, but not of branch A. If the prices of articles A and B amount to 110, then the equalisation of the average A and B profitability is concealed behind the identical profitability of each group of enterprises producing article A; while the profitability level of the enterprises producing article B is shaped very differently—from the high profitability of group I to the deficit of group III. If the other conditions remain constant and the possibility arises of increasing production at a unit cost of 115, then such production should not be set in motion in branch A, while it is advantageous in branch B, but only within the limit of 1000 units. If the domestic demand for A and B amounts to 4000 units and the surplus is destined for export at prices corresponding to 110, then—although the average cost accounting would show the profitability of exporting articles A as well as B—actually, the export of group III articles of enterprises A would be profitable, whereas group III articles of enterprises B would be at a deficit, etc.

While the example is simplified to the utmost, it still seems

that it pertinently illustrates the need for considering the dependence between the increase of production and rise in costs; and it shows that an accounting based on average magnitudes does not provide an accurate foundation for optimum decisions from the viewpoint of the national economic interests.

This thesis should not be understood as a general negation of the importance of the average cost category. Average costs characterise the level of development of the productive power of social labour in a given branch. An analysis of the dynamics of average costs is an indispensable element of long range considerations, particularly as pertains to forecast changes in the distribution of the total stock of social labour—living and materialised—between the different branches of production. But this does not mean, however, that mangitudes indispensable for estimating tendencies of development are suitable to the same degree for an economic accounting in given conditions.

Socialist economy gives rise not only to the need for the operation of a particular type of marginal accounting but creates the conditions for its application. In the capitalist system a rational distribution of production tasks, from the viewpoint of minimising total outlays, can reach a high level only on the scale of the individual concern. Whereas in the socialist structure such a distribution is possible on the scale of the entire economy. There is no basic obstacle to the proper differentiation of constant and variable cost elements, nor to the grouping of enterprises on the basis of cost levels. What is more, the plan enables consideration not only of the production structure existing at the moment, but also the consequences of commissioning new productive forces as well as the rate of progress in utilising already functioning equipment, etc. We are thus by no means obliged to conceive of 'given conditions' in a strictly static sense; 'given conditions' also embrace changes occurring in the examined period, which lend themselves to consideration in accounting with a sufficient degree of preciseness.

Is my affirmation of the efficacy and possibility of applying the concept of marginal accounting in socialist economy synonymous with affirming the necessity of basing the system of starting point prices on cost relations in the 'dearest' group of products? It is hard to give an unequivocal answer to this question.

It is possible to imagine a system in which the economic accounting will be effected on a central level by means of a corresponding disposition of calculated magnitudes, while the conclusions resulting from that accounting will be applied in life by a method of direct orders. To apply an example—let us assume that the central disposing agency maintains that it is possible to limit the consumption of articles A and B to 5000 units. Then, on the basis of the known marginal costs of A and B, a reduction of production B to 2000 units is ordered, directing the corresponding customer demand by means of a system of allotments. The destiny of the proposition to increase production at the cost of 115 will also be decided on a central plane, and a decision will be taken what to export, etc. It is not excluded, however, that attempts will be made to base orders on certain forms of incentives (for example, appointing higher premiums for savings in B units than in A).

It is hence theoretically possible to make use of marginal magnitudes accounting just like any other, without expressing it in real price systems. This simply means giving up prices as instruments influencing the choice of lower economic links and substituting other instruments for them.

If we, however, establish the high many-rung level character of economic accounting and the so-called certain sphere of autonomy on the enterprise or multi-establishment enterprise level—in the desire to assure the harmony of enterprise palns (in relation to consumer plans) with the general social accounting—then we must express the alternative choices in a corresponding price system. Only if we bear this in mind, does the reasoning on which is based the theses of the Pattern Commission of the Economic Council, become actual.[12]

The answer to the question posed therefore requires primarily making more precise the goal we wish to attain by means of a price system. If—as is entirely proper—we desire that the price system should first of all provide a true alternative choice within the framework of the so-called short-range—with a given production apparatus—then I think that a better point of departure for

[12] Of course this is not synonymous with acknowledging the correctness of the whole conception. I have already mentioned, for example, the dubiousness aroused by the structure of price supplements. Doubts of this sort may be developed further. We are concerned, however, with the basic direction of the argument.

price relations would be the average costs of the 'dearer' group of products than the average costs of total production. I repeat that we have to do here only with the point of departure (with 'starting point') prices; while a concrete price system must consider market conditions and social priorities. It is particularly clear that in the case of a deficit of productive power in relation to demand, price formation cannot rest in general upon cost relations.

* * *

I did not intend to embrace in this article all the complicated problems of price formation and hence did not consider numerous arguments against the conceptions of the theses—arguments advanced more from the viewpoint of true incentives for suppliers as well as from that of the economic accounting of investment effectiveness. We will perhaps have more than one occasion to return to such problems. The question, however, is to return to them without the ballast of misunderstandings which still continue to harm a true analysis of the usefulness of one or another element of marginal accounting. The casting off of this ballast may help to undertake an attempt to create a general correspondence between the conceptions advanced in the 'Theses of the Economic Council' and the 'classical' marginal costs theory, on the one hand, and with the Marxist theory of value—as applied to the conditions of socialist economy—on the other hand.

9

ECONOMIC CHOICE IN PLANNING AND THE PRICE PROBLEM

Bronislaw Minc

1. THE OBJECTS AND DIRECTIONS OF ECONOMIC CHOICE

CONTEMPORARY SOCIALIST SOCIETY, like every other type of society, disposes of only a limited quantity of productive power, a limited amount of raw materials and facilities and labour power, particularly of skilled labour power. Moreover, the aims of socialist society are generally broader and actually exceed the means.

A socialist society has in view two fundamental aims: (1) A rise in the general well being of the masses and (2) an increase in the productive power. To a certain degree, a contradiction exists between these two aims. But this is only a relative contradiction, appearing in short periods, when the development of productive power conditions the rise of material well being and of cultural level.

It is clear that society must always choose between consumption and investment, as also between different production targets. Hence the key problem of planning is that of the economic choice. This leads to the determination of the order of priority of targets and the allocation of the limited means available to these targets.

Generally speaking, the question of the economic choice embraces the following tasks:

(1) Fixing the proportion of means to be expended on current and future needs—a synthesised expression of the choice between present and future needs is the percentage of the national income assigned to consumption or to accumulation.

(2) Choosing between the development of productive and non-productive spheres; or, more precisely, establishing the proportion between means spent on the development of productive and non-productive spheres. The development of the latter—particularly the

health service, culture, science, etc.—is indispensably necessary for social development, but labour in these spheres does not create material values and only indirectly contributes to the development of production, whereas, expenditures on the expansion of the direct production apparatus, condition the development of production.

(3) Choosing between different directions of production. This involves a choice between the development of different departments or branches of production. It is, in other words, a problem of deciding on development priorities, the rate of development and the sums to be invested on heavy and light industry, in individual economic branches in agriculture, communications, etc. This is a very important question since the magnitude and nature of future production depends on what spheres we invest in.

(4) Choosing between different investment variants (the so-called projection of technical-economic solutions).

Planning has to do with all these four types of choice, since the direction of production development predetermines also the structure of production and of the national income distribution. For example, the expansion of production branches producing real elements of accumulation to a greater degree than those creating means of subsistence, develop a new structure of gross production —with a diminution of the portion of means destined for consumption and an increase in that of accumulation.

II. ECONOMIC CHOICE IN CAPITALIST ECONOMY

It is a clear and incontrovertible fact, not only to Marxists but also to many bourgeois economists, that the system of economic choice, under conditions of price and profit fluctuation, leads to great social losses—particularly on the basis of the monopoly capitalist tendency to maximise profits without regard to the production volume. A new edition of a book by the West German bourgeois professor, E. Schmalenbach, published in Cologne,[1] maintains that in the period preceding World War II, private world industrial investment led to the formation of a great productive capacity which was superflous and could not be utilised. It holds further that the same phenomenon has appeared after the

[1] E. Schmalenbach, '*Kostenrechnung und Preispolitik*', 7th ed., Westduetscher Verlag, Cologne and Opladen, 1956.

Second World War. For example, production capacity of steel pipe—one of the big branches of German industry—amounted to 1.4 million tons annually in 1938; but only 1 million tons of this production capacity was utilised. As a result of investments the capacity of that industry rose to 1.7 million tons but only 0.9 million tons was utilised. Despite this, capacity was increased by 0.2 million additional tons the following year.

The phenomenon of which Professor Schmalenbach speaks is expressed even more strongly in the United States and England. This is attested by the vast gulf between the increase in industrial production capacity and the relatively insignificant growth of industrial production.

The American Professor Arthur Smithies of Harvard University, discussing the 'causes' of the 1957-58 American recession, affirms 'the principal cause is the more rapid expansion by the economy of productive power than the growth of demand. We would tend to create less productive capacity if we did not possess powerful external stimuli just as we had before the end of the Second World War or during the war in Korea. This is a permanent tendency of our economy which neither political-economic tools nor economists have thus far been able to master.'[2]

Owing to the lack of demand, the permanent growth of unutilised production capacity has also developed in Great Britain. According to the estimate of the British economist T. Barny, the relation between capital and production stood as follows in 1958:[3]

	Capital at the beginning of the year	*Production*
1950	100	100
1958	142	120

III. ECONOMIC CHOICE IN SOCIALIST ECONOMY

Let us now briefly consider the problems of the economic choice under the production relations of socialist economy. The classics of Marxism-Leninism have rejected the viewpoint that the criterion for a choice in socialist economy should be based on the operation of the law of value. Thus Engels wrote in *Anti-Duhring*:

...It will be necessary for society to know how much labour

[2] *Problems Economiques*, No. 542, May 1958, pp. 6, 7.
[3] T. Barny, 'How Much Unused Capacity?' *The Financial Times*, 24 July 1958.

> each article of consumption requires for its production. It will have to arrange its plan of production in accordance with its means of production, which includes in particular its labour forces. The useful effects of the various articles of consumption, compared with each other and with the quantity of labour required for their production will in the last analysis determine the plan.[4]

And Engels adds in the footnote:

> As long ago as 1844 I stated that the above mentioned balancing of useful effects and expenditure of labour would be all that would be left, in a communist society, of the concept of value as it appears in political economy (*Deutsche-Franzosische Jahrbucher*, p. 95). The scientific justification for this statement, however, as can be seen, was only made possible by Marx's *Capital*.[5]

Marx and Engels therefore stood on the position that a choice of the direction of production under socialism would be made by balancing the effectiveness of given branches of production and the labour input required for such development. This can be done without the intermediation of 'value' on the basis of conscious human activity which will compare different use values with the labour input indispensable for their attainment and will arrange on this basis the order of priority of production targets. The guidance given by the Marxist-Leninist classics on the economic choice in a socialist economy has great importance for us, but it requires the elaboration of corresponding methodologies and consideration of the specific characteristics of contemporary socialist economy. For, as we know, contemporary reality is more complex than was conceived by the creators of scientific socialism. Hence, the necessity arose of maintaining commodity production for a long period after the conquest of power by the working class.

It is first of all necessary to answer the question how the economic choice is really executed in the sphere of socialist production. It is necessary to state on the basis of experience that the consideration of anticipated profits and prices does not constitute the economic choice in a socialist economy. The choice of the direction of production is decided in all socialist countries by the consideration

[4] F. Engels, *Herr Eugen Duhring's Revolution in Science* (*Anti-Duhring*) (Lawrence & Wishart London, 1934), p. 340

[5] *Ibid.*

of assuring the optimum economic growth and proportionality of economic development. This can be affirmed on the basis of the fact that great investments are made in departments and branches of production which give relatively very little profit. In the Soviet Union the largest investments have been made in heavy industry, which operated at a deficit over a long period of time, and currently yield relatively small profits. The situation is the same in People's Poland and other socialist countries. Thus, investment in socialist economy is not made on the basis of the volume of profits criterion, but by the consideration of new criteria, flowing from the nature of socialist economy, in the choice of the direction of production. It is from this point of view that the above-cited Marxist classics affirmed that the price and profit movements cease to be production regulators under socialism. It follows from the above-cited Engels' statement, that under socialism, the criterion of choice between the production of different articles should have the relation $P : T$ (P—use value of selected articles; T— amount of living and materialised labour indispensable to their production). So that, it would be necessary to primarily stimulate the production of those articles for which the above relation is the highest. It is not a question here of the degree of usefulness of articles to individuals—which has a subjective character and cannot be measured or compared—but of their social utility, i.e., we are concerned here with usefulness which is estimated from the viewpoint of the interests of society.

The social utility of different articles and volumes of labour power indispensable to their production change with time—depending on various circumstances. A choice of the direction of production must hence be made for a given period. Moreover, it is necessary to solve this problem for a short period (employing Marx's formulation 'at a given level of development of the productive power') and for the long range (using Marx's formulation 'with the development of productive power'). The condition of stocks (labour power, means of production, natural wealth) and accumulation possibilities exert an essential influence on the choice of the direction of production in the short as in the long range; but the shorter the period, the more limited is the possibility of such a choice. However, the volume and structure of production mainly change owing to investments; but the investment process

requires time. A choice of the direction of production consequently depends upon the time perspective set by socialist society.

Choice of the direction of production in socialist economy in the long range is arrived at on the basis of perspective plans of the national economy, which is characterised by the extension of the duration of these plans.

Furthermore, a socialist choice of the direction of production can only be attained by applying the method of balancing, of comparing production requirements with their possibilities.

The goal of socialist production is the satisfaction of the needs of society. However, in establishing the range and structure of production for a given year, it is necessary to clearly determine the production targets, namely: individual consumption, collective consumption, productive investments, non-productive investments, growth of reserves (means of production, means of consumption), material wear and tear, export.

It is necessary to consider the given *type of personal* consumption, taking into consideration the income level, family relations, etc. in determining the range and kind of production destined for consumption. A scientific analysis defining the most appropriate and expedient (especially from the viewpoint of wholesomeness) norms of per capita consumption of different articles should be of principal importance for determining the anticipated type of consumption.

Establishment of the anticipated type of consumption determines the production requirements for means of consumption and indirectly also for means of production, indispensable for producing the means of subsistence and for realising the investments which make possible the attainment of a given production level—of both, means of consumption and means of production.

From a social viewpoint, the demand for given means of subsistence—which enter into the composition of the anticipated type of consumption—has a complementary character. This means the equal necessity of producing every kind of means of consumption determined by that type, and independently of that, those that satisfy the most indispensable needs (for example, radio sets, TV's). It results from the complementary character of demand that the relation between the use values of means of consumption and the labour input indispensable for their production is cons-

tant—in the sphere of the given type of consumption. To put it differently, this means that $P_1 : T_1 = P_2 : T_2 = P_3 : T_3 = P : T =$ constant (P— use values, and T— labour inputs). In the choice of the direction of production, the chief decision has hence to be made in establishing the sphere of the anticipated consumption type; and this in turn must be determined on the basis of defined norms and scientific analysis.

The possibility of substituting certain means of consumption for others must be considered in establishing the anticipated type of consumption. This should be decided by the relation between the quality of demand satisfaction and the labour input indispensable for the production of the given means. Of course the tendency should be to minimise the labour input in relation to the satisfied demand.

It is next necessary to determine the range and type of production destined for purposes of investment, which depends upon the anticipated volume of gross investment and its structure as well as on technical progress. In other words, it is necessary to determine the most suitable type of investment in the last year of the perspective plan.

It is likewise necessary to determine the anticipated type of collective consumption of material wear-and-tear, imports and exports as well as changes in inventory. Such determination must rest upon corresponding economic and other analyses, assuring minimum inputs in relation to effects (outputs.)

It would consequently be necessary to compute the gross production of individual departments and branches of production and their designations in the form of the table shown on next page.

The possibility of attaining the chosen volume and structure of production and its proper destination depends on the possibilities of increasing production, exports and imports—which in turn depends upon the volume of accumulation and its relation to the national income and their effectiveness. The balance of the volume and structure of production and their destination should be achieved *in close succession*, which could enable the revision of the accepted type of personal consumption, investments, etc.

In determining the desired type of consumption, investment, etc., and in general, in the choice of the direction of production,

GROSS PRODUCTION AND CONSUMPTION

(in million zlotys)

PRODUCTION DEPARTMENTS AND BRANCHES	*gross production*	GROSS PRODUCTION DESIGNATION							
		material wear and tear	*personal consumption*	*collective consumption*	INVESTMENT		INVENTORY CHANGES		*exports*
					total	*of which productive*	*means of production*	*means of consumption*	
total	1	2	3	4	5	6	7	8	9
I Industry and handicrafts									
II Building									
III Agriculture									
IV Forestry									
V Transport and communications									
VI Economic turnover									
VII Miscellaneous material production									
VIII Imports									

an important rule should be the tendency for the fullest possible utilisation in production of the existing stocks, particularly of labour power. This generally requires an appreciable accumulation share in the national income, and a corresponding structure of social production.

The accepted type of consumption, investment, etc., should be so constructed as to assure the highest possible satisfaction of consumption requirements and the greatest possible economic growth over the long range. But this can only be attained on the basis of concentrating all efforts on the given branches and sectors of the economy, i.e., by adopting the principle of the *main link*. This principle requires concentration of efforts on the key sectors, whose development assures the highest economic gains.

The experiences of the socialist countries—particularly of the Soviet Union—show that a choice of the direction of production, on the basis of the planned given production requirements, makes possible the rapid rate of economic growth by adopting the principle of the main link. If the USSR had adopted other principles of economic choice, namely the 'law of value'; and if it had assumed that investment should adapt itself to the price and profit movements, and also to the supply and demand relation of individual products then it is clear that it is the light industry primarily which would develop. And the USSR would have remained to this day an economically extremely backward country. The same applies to People's Poland and other socialist countries. Thus it is clear that if the 'law of value' were applied by socialist countries to the investment sphere, then investments would be made in spheres which yield the highest profit and not necessarily in those which assure the optimum economic development. That of course would not favour the economic development of socialist society.

IV. CHOICE OF INVESTMENT VARIANTS

Marx's statement in Volume III of *Capital* has a great significance to the solution of the problem of the investment variant choice. Wrote Marx:

> . . Socialised man, the associated producers, regulate their interchange with nature rationally, bring it under their common control instead of being ruled by it as by some blind power;

that they accomplish their task with the least expenditure of energy and under conditions most adequate to their human nature and most worthy of it.[6]

This Marxian guidance means that it is necessary to attain any production goal by means of the minimum labour input. For that purpose it is necessary to compare the effectiveness of the construction of an investment object with the sum of social labour indispensable for that construction. Since contemporary socialist economy does not provide any evidence of labour inputs during working time, we must take production costs instead of labour inputs.

In my opinion, a choice of investment variants may, in the main, be achieved on the basis of the following formula (coefficient):

$$\frac{PN}{I+K+(M+O)N}$$

P = yearly production at comparative prices
N = number of years of plant operation
I = investment outlays
K = capital renovation outlays
M = yearly outlays on materials
O = yearly wage outlays

The total effects yielded by the construction of the investment object (that total expresses the use value) appear in the numerator. Thus, for example, if the goal of production is to build a passenger automobile factory of 30,000 cars annual capacity, then its effectiveness will be measured by the yearly physical production volume—which is expressed by means of comparative prices, P, multiplied by the anticipated durability period of functioning of an automobile plant, N.

In the denominator appear the total costs indispensable for building the investment objective, in particular: (1) total investment outlays, I, (2) magnitude of the anticipated capital renovations in the duration period of the investment object, K, (3) the magnitudes of the costs of materials and of wages which are indispensable for the exploitation of the investment object in the period of its duration, $(M+O)N$. Hence, there appear in the denominator the

[6] K. Marx, *Capital*, Vol. III (Kerr ed., Chicago, 1909), p. 954.

investment outlays and expenditures on capital renovation and exploitation, related to them.

Of course, the bigger the fraction (investment coefficient), i.e., the lower the outlays of investment and exploitation, in relation to production, the more profitable will be the investment variant.

It is necessary to enumerate the effects and outlays (costs) according to obligatory prices in some period in calculating the investment coefficient. It is necessary to take as such a period the year directly preceding the commencement of the investment or else the year the investment begins.

A characteristic interdependence exists between the volumes of investment and exploitation expenditures in the choice of investment variants. The higher the investment outlay, the higher may be the technique and the productivity of labour on the new investment object, and the lower may be its exploitation costs. And conversely—usually the technique on a newly-built investment object is on a lower level with a smaller, than with a larger investment outlay. The investment coefficient shows that the application of a higher investment outlay is appropriate (compared to a lower investment variant) when the greater outlay is raised in correspondence with savings in the exploitation costs during the duration period of the investment object.

Our consideration of the problem of the choice of investment variants, omitted the question of the time period required to build the investment object. Society cannot be entirely indifferent to this question. One more element therefore has to be added to the investment coefficient, namely, the charges resulting from the freezing of investment means during the period of building the investment object. In a practical sense, such charges must be established in the form of a given percentage of the magnitude of investment outlays incurred in individual years. Thus, for example, if the investment outlay equals 400 million zloty, which yields 100 million zloty the first year and an equal amount the next year, and the rate of depreciation is 8 per cent yearly, then the charges from the freezing of investment means will equal: 8 per cent of 100 million zloty over 4 years + 8 per cent 100 millions zloty over 3 years + 8 per cent of 100 million zloty over 2 years + 8 per cent of 100 million zloty in one year.

Consideration of the charges from the freezing of investment

means among the coefficients of investment effectiveness is of great practical importance since accelerating the construction cycle of investment objects may bring vast gains to the national economy.

By embracing the charges ensuing from freezing investment means, the investment coefficient will assume the following form:

$$\frac{PN}{I+Z+K+(M+O)\,N}$$

(Z—signifies the sum of freezing consumption means charges).

It is necessary to connect the problem of investment effectiveness with the question of the location of investment objects. In many cases the question of proper location may be an approach to investment effectiveness. For the costs of transporting raw materials and other materials to production plants—ensuing from the investment—and the costs of transporting finished goods to the markets depend upon the location of the investment objects. This is why it is appropriate to apportion from prices the transportation costs of raw materials, other materials, and finished goods, and to include them in the coefficient of investment effectiveness. The coefficient will then be represented in an enlarged form, as follows:

$$\frac{PN}{I+Z+K+(T_1+M+T_2)\,N}$$

(T_1 = transportation costs of raw materials and other materials to production plants; T_2= costs of transporting finished goods from production plants to markets).

It is important to properly establish the durability period of investment objects in examining investment effectiveness, N. It seems that the viewpoint is currently dominant among economists that it is necessary to consider not only the physical wear-and-tear of constant capital, but also moral depreciation in establishing that durability period.

The problem whether it is necessary to establish a rate of interest on the capital invested in considering investment effectiveness, is controversial. Some maintain that it is necessary to include in investment effectiveness accounting a rate of interest on the sum of investment means over the entire durability period of the investment object. They try to substantiate this with the reasoning that since in-

vestment means have a limit, the inclusion of an interest rate will enable the choice of investments which yield the greatest results in the relatively shortest period of time.

In my opinion, a number of considerations argue against this viewpoint. These are:

(1) As shown above, of decisive importance in choosing investment variants is the choice between variants of a higher technique—requiring as a rule, greater investment outlays and lower exploitation costs—and variants of lower technique—which generally require lower investment outlays and higher exploitation costs. Let us consider two investment variants: I_1 (of higher technique) in which the outlays are:

$$I_1+K_1N$$

and I_2 (of lower technique) in which the outlay will be:

$$I_2+K_2N$$

then, $I_1>I_2$, and $K_1<K_2$

(I= investment outlay; K= explotitation costs; N= possible number of years of plant's physical functioning).

The excess of I_1 over I_2 is the amount of increase in invest ment outlays, and the difference between K_1 and K_2 is the savings in exploitation costs. The problem of an economic choice between investment variants of a higher or lower technique therefore leads to the comparison of the increased investment outlays with the savings in exploitation costs—or to an investigation of the profitability of increased investment outlays. It is also essential that it is possible, without including interest in the investment index, to figure out the relation of the saving to the increase in the investment outlay at an annual rate, i.e., if it equals

$$[K_2-K_1]-\frac{I_1-I_2}{N}\cdot\frac{100}{I_1-I_2}$$

(without considering moral depreciation, i.e., by assuming a uniform durability period of the investment objective, originating on the basis of the variant establishing a higher technique, and an investment object arising on the basis of the variant establishing a lower technique).

In other words, without including interest in the investment effectiveness coefficient, it is possible to learn the real (investments

outlays and exploitation costs) and not the fictitious (interest) magnitude as a percentage of the production increment or of the accumulation yielded by increased investments.

(2) The inclusion of interest in the index is also contradictory to the role which an investment effectiveness index has to fulfil. Still, it has to serve for an economic analysis of different investment variants and not for automatically foreseeing which variant must be chosen. Including interest in the index will lead to such prejudging, as to fundamentally eliminate any economic effectiveness analysis of investment variants. But the essence of an investment effectiveness analysis has to be, on the contrary, its making possible an examination of the differentiated effectiveness of these variants.

By way of example, let me mention some problems which must be considered in such an analysis. Let us first of all deal with the problem of moral depreciation. As a rule, the higher the technical level of the constant capital and investment solutions, the later will their moral depreciation ensue, or else it may not ensue at all in the period of the possible physical life-span of the constant capital. And conversely, the lower the technical level of the constant capital and the investment solutions, the more rapidly will ensue their moral depreciation. The projection of moral depreciation is one of the unfavourable sides of applying obsolete technique; it is at the same time one of the most essential circumstances considered in the adoption of investment variants which rest upon high technique.

In making a choice between investment variants of a high or low technique it is therefore impossible to assume a uniform durability period of the investment object utilisation, N, if the possible life-span is the same. In considering moral depreciation it is necessary to take a *shorter* period of utilisation of an investment object of lower technique, and a *longer* utilisation period of an investment object of a higher technique. Adoption of investment objects of a shorter durability periods rather than those of high technique, has a very important influence on the investment effectiveness accounting.

(3) A variant of higher technique requires the employment of a lesser number of workers than one of lower technique. There will undoubtedly be a rise in wages a certain time after commissioning the investment object. This is consistent with the objective

necessity of rising living standards in a socialist economy. Of course, the increase in the wage fund will be higher in variants of lower technique (highly labour-absorbing) than for variants of low technique (less labour-absorbing). This results in a stronger diminution of financial accumulation with investment objects of low technique than of those with a high technique. Owing to the greater labour-absorption of investment objects with a lower technique, the social outlays on employment will burden them more than it will those with a higher technique. Outlays on workers' housing, for example, belong to that type of expenditures.

(4) It is also necessary to consider the volume of the indispensable *means of turnover* (which may be lower with investment objectives of a high technique than with those of lower technique). This pertains particularly to the *circulation period* of the means of turnover. Higher technique is characterised by the acceleration of the production cycle. In this connection, investment objects of a higher technique may—but do not have to—have a faster production cycle and consequently require less means of turnover than investment objects of a lower technique.

(5) An indispensable all-sided analysis cannot establish the rate of interest charge on investment outlays, which in general must furthermore be fixed gradually; for there do not exist objective criteria under socialist economy for determining the magnitude of that rate. It is not known, for example, why one should assume 15 per cent and not 6 or 8 per cent.

(6) In our conditions, as a result of the still low level of technical development and relatively low wage level, the choice of an investment object of a high technique is not always profitable in the light of an investment effectiveness accounting—even without including interest. Whereas, the adoption of variants of a high technique is to a great extent more profitable for more highly developed countries, in which the relation between the prices of investment goods and the volume of wages is not the same as it is with us. Under these conditions the inclusion of interest in effectiveness accounting would be a threat to the adoption of low technique variants, and would furthermore lead to the retrogression of our economy in comparison with more highly developed countries.

The adoption of high technique variants provide the economy

with a number of measurable advantages as well as with gains which do not lend themselves to accurate measurement by means of effectiveness accounting.

(7) Instead of applying interest it is possible to accurately consider the time factor in effectiveness accounting, primarily by including the charges of frozen investment means, and by the proper determination of the durability period of the investment object. Of course, the choice of investment variants cannot be stereotyped. Besides those mentioned above, it is possible—and necessary—to add still another investment estimating criterion in the case of certain economic branches, particularly, where the built investment object has a very long durability (30 years or more). Such criteria may result particularly from applying the so-called *time perspective*. Such a perspective must be understood as the time period in which political-economic considerations demand the maximisation of the production volume obtained. Using the time perspective in the adaptation of investments to economic effectiveness may mean the maximisation of relations between production and investment outlays in the period determined by the time perspective—although at the cost of certain losses in the period beyond the time perspective.

V. ECONOMIC CHOICE AND PRICES

Although the law of value—and concretely, the price and profit magnitudes—do not decide the choice of the direction of production, nevertheless, prices, wage schedules and size of accumulation (profits) are basic instruments of economic choice between different variants which have the aim of satisfying the same requirement. Decisions in the sphere of economic choice between such variants depend upon the price and wage systems and on the mutual relations between prices and wages (this concerns particularly the prices of investment goods and the means of production they require).

Solution of the problem of prices (in their relation to the magnitudes of wages and accumulation) as instruments of accounting and economic choice, requires a brief presentation of the views of Marx and Engels on this question. Marx and Engels rejected value, and in this connection also price, as criteria for economic choice

and accounting in a socialist economy, since they showed that socialist economy does not rest upon commodity production. Nevertheless, Marx and Engels did not reject, but on the contrary, very strongly emphasised the necessity of precisely such accounting and choice in socialist economy. In the third volume of *Capital* Marx even wrote that determination of the indispensable labour input and accounting will be even more necessary under socialism than under capitalism.

We find in the works of Marx and Engels an unusually valuable and important critique of prices, wages and profits as instruments of accounting and economic choice. In the most general terms, this critique consists in the following:

(1) The computation in economic accounting of the prices of means of production and of wages, computes the total expenditures on materialised labour, but only that part of the input of living labour for which the capitalist pays. In other words, instead of computing C (values of the means of production) and $V+M$ (the values produced by living labour), what is computed is $C+V$. This leads to the warping of the economic accounting and to a limited application of new technique.

(2) Submission of economic accounting to capitalist criteria results, as Marx wrote, in capitalist production reaching its limit at a level of expansion, which would be to a great extent inaccurate according to other premises. This comes to a halt not because of the requirements of the satisfaction of social needs, but when it is necessary for the creation and realisation of profits.

(3) The deviation of price from value and price fluctuation are not excluded (strictly, from the price of production). That of course affects economic decisions and constitutes one of the causes of economic disproportions.

Marx figured the labour time of living and materialised labour as tools of economic accounting, not production costs; and hence, not as the prices of means of production or wages. We know, however, that owing to the existence of commodity production, the calcultion of labour input in hours of labour has a limited application in contemporary socialist economy (for example on the factory level an accounting is possible of the so-called regulated working hours.) It is not possible then, to effect an economic choice between directions of production and investment

variants by means of labour input. The only instruments for making such a choice, as well as for an economic accounting, can therefore be production costs, prices and wages. It is necessary to state though, that as a rule, prices must deviate from values and cannot therefore serve as an accurate tool of economic accounting. Value itself is a highly relative concept, since it is determined not by the labour input consumed in the production of commodities, but by the labour input indispensable for their reproduction. Value therefore follows in the wake of changes in the rate of growth of labour productivity in different branches of production.

History also teaches us of the existence in the course of thousands of years of ceaseless complaining about prices and of the ineffectual striving to contrive some sort of a 'just' price system. We can recollect, for example, the regulation of the price of grain in ancient Greece, the maximum prices established by Diocletion, or the scholastic theory of *iustum pretium* (just prices). Our price system undoubtedly possesses very serious shortcomings, which certainly make an economic accounting difficult (if not impossible). The essence of our price system is, however, determined in general by objective conditions, primarily by the volume of social production and its structure and by the productivity level of different branches of production.

In order to be able to serve as a proper tool of economic choice—in the above meaning—the price system in a socialist economy must fulfil the following functions:[7]

(1) To secure the consumption interests of the working people, and to influence the direction of consumption;

(2) To assure incentives for increasing production and productivity;

(3) To ensure the state with indispensable income, and thus enable outlays for social and cultural purposes, for accumulation (investment), defence and administration;

(4) To assure socialist enterprises with the indispensable income for their proper functioning, and for technical and economical development;

(5) To ensure general market equilibrium and equilibrium in the turnover of individual products; and

(6) To effect savings in the consumption of means of production.

[7] See B. Minc, 'Outline of Production Costs and Price Theory,' Warsaw, 1958.

It may be asserted in a general way that the price function in a socialist economy is to bring about such relations in the economic goods turnover, as will promote to the maximum the creation of the national income, and its distribution in a manner corresponding to the character of socialist economy.

In connection with the above, prices should be profitable (i.e., they should cover production costs and contain a surplus over and above these costs, i.e., for accumulation), and constant over an extended period. Unprofitable and variable prices in short periods not only harm and make difficult economic accounting, but may even make it impossible. By profitable prices must be understood those which ensure the profitability of production branches, and not the profitability of absolutely all particular goods produced.

The price system for means of production has particular importance for an economic choice between variants of different solutions which aim at the same production goals. The price system should consider the theory of *alternative costs* in a socialist economy. The assumptions of this theory may be formulated as follows:

(1) Changed relations between the values of investment goods, i.e., changes in value primarily of machines and equipment and in the volume of wages, of course ensue from the fact that productivity changes in measure with technical progress; in this connection, there is a relative decline in the values of investment goods, and at the same time an increase in the wage magnitude as a result of the rise in production capacity and greater demand for workers. It is therefore possible to formulate the rule that there is a declining tendency in the relation between the values of investment goods and wages which results from technical progress, and that the lower that relationship, the more the economy is basically developed from a technical-economic viewpoint.

(2) The profitability of applying machines and equipment depends upon the relation of the values of investment goods and the wage magnitude. It is clear that the lower that relation, the greater is the possibility of the profitable application of new machines and equipment. It incontrovertibly follows from this that technically highly developed countries may more widely apply machinery and equipment in a profitable manner and may therefore effect a more rapid tempo of technical-economic development.

(3) The way to lower the relation between the prices of investment goods and the wage magnitude, is to lower the prices of investment goods, and simultaneously increase the investment range—absolutely and relatively (in relation to the national income). If we fix the prices of investment goods to equal the production costs, and similarly the prices of all means of production used to produce investment goods, then the prices of investment goods as well as the relation between the prices of the latter and wage magnitudes are basically lowered. The consequence for investors will be an appreciably greater profitability in the application of new machines and equipment; and they will be able to achieve more rapid technical-economic progress. If prices are higher than production costs, but lower than market prices (for example, prices yielding only 50 per cent of normal profits), are used to fix the prices of investment goods, there will then be an acceleration of technical-economic progress, but it will not be as great as it would be by means of investment goods prices calculated according to production costs.

Under capitalism lower prices of investment goods and of the means of production used to produce them, can basically be only partial in character, and depend especially on the state financing economic growth in one or another manner (by lowering prices on means of production produced by them, by subsidies, tax rebates, for example). Whereas, a general application of production costs as a basis for the principle of fixing lower prices on investment goods cannot take place, since that would not be in agreement with the interests of the capitalist enterprises which produce investment goods and the means of production required for their production.

Under socialist conditions, with a centralised system of the distribution of the surplus product, and with reproduction carried out within the framework of the complete socialist ownership of the means of production—and not only within the framework of individual enterprises—a system of lower prices on means of production can be applied on a large scale in order to accelerate technical-economic progress. The economic importance of lower prices on means of production (resting on production costs plus a small profit) which has been applied in the Soviet Union and other socialist countries over a very long period consists of this. This is one of the means for attaining an accelerated technical-

economic development and economic growth in these countries.[8]

(4) It results from relatively low prices on means of production that economic accounting expresses only the part of the outlays on labour which is realised in wages: i.e., only in outlays on living labour. In this manner, the relation between production costs and wages approaches the relations between the full outlay on materialised labour and the complete expenditure on living labour—which, as shown above, was considered by Marx as the rational criterion for an economic choice

(5) The prices of machines and equipment may oscillate between two limits. The lower limit is the magnitude of production costs. The upper limit is the magnitude of the labour input (hence by the magnitudes of wages and of the surplus products produced by living labour) which are represented by the given machines and equipment. Of course, the latter limit has a theoretical character since it is not always possible to fix the magnitude of the labour input represented by machines and equipment.

The prices of machines and equipment are composed of costs of production k and the surplus n. If the magnitude of outlays in living labour represented by the given machines and equipment is designated by $v+m$, then the following unevenness should ensue:

$$k+n<v+m$$
$$\text{or, } n<v+m-k.$$

In other words, the surplus incorporated in the prices of machines and equipment must be lower than the difference between the labour input magnitude, represented by the given machines and equipment, and their cost of production.

Prices of means of production should therefore be fixed on a level which will enable the profitable application of the means of production, particularly of machinery and equipment. At the same

[8] The well-known bourgeois economist, Wiles, wrote as follows about the Soviet price system: 'The assertion that Soviet prices and production range are irrational in actual practice is due to a misunderstanding. Properly considered, the broad category of relations are entirely rational, *perhaps more rational than elesewhere*. . . . the broad categories, such as investment goods and consumption goods are properly estimated in their interrelations, perhaps much more properly than under capitalism' ('Scarcity, Marxism and the Gosplan,' *Oxford Economic Papers*, October 1953).

time, the limit of this price profitability should be high enough, as to be favourable to effect savings in means of production.

* * *

I would now like to briefly analyse several theoretical viewpoints on the problem of prices in People's Poland, which are incorrect in my opinion. Broadly, these viewpoints may be reduced to the following conceptions:

(1) Prices ought to be, first of all, equilibrium prices.

(2) The point of departure of prices ought not to be the average costs of production branches, i.e., the totality of enterprises producing most dearly.

(3) It is necessary to abolish the so-called two-level price and fix the prices of means of production on the same basis as the prices of means of subsistence, i.e., to include a high rate of accumulation in the prices of means of production.

The conception that prices ought to be of an equilibrium character—if by that is understood their relation to market supply and demand—contains some reasonable elements, although it is neither thorough nor accurate. For it is not possible to reduce the essence of prices in a socialist economy to that of assuring 'equilibrium'. As is known, equilibrium can be assured on different levels; thus, also by low production and high prices. So called equilibrium may hence ensue also from the under-utilisation of the enterprise's production capacity. Viewpoints of price equilibrium in socialist economy are therefore mistaken inasmuch as they forget the functions of prices, which are to promote the highest possible consumption level. They also forget the active role of the state in the formation of gross supply and gross demand (gross supply is defined by the total prices of goods and services; gross demand—the total spendable income of the people) as well as of the supply and demand of individual articles (this supply is determined by the state in shaping domestic production, exports and imports).

There is an interdependence between prices, production costs and supply and demand. In socialist economy the state actively influences every component of this interdependence. Hence, the state also influences prices by means of which it has to equilibrate supply and demand, not on any level and through any kind of prices, but in a manner which is possible and at same time efficacious for the socialist economy.

The theory of so-called marginal costs as a basis of price formations is entirely false theoretically, while it fulfils a certain social function. It is first of all necessary to state that nowhere in the world are marginal costs the basis of price formation; and that average costs serve as such a basis. In modern conditions, prices are not fixed on the basis of marginal costs, but of average costs even in the capitalist mining industry. (This is attested by the unprofitability of many coal mines in Western Germany, France, Belgium, etc.). This is of course not accidental. The very operation of the law of value, and the existing regulations in the sphere of prices connected with it, determine that only the social labour input indispensable for the production of goods can be the starting point basis of price formation. Hence, such a basis can be only average outlays and not marginal costs. The theory of so-called marginal costs as a basis for prices is therefore in violent contradiction with the Marxian theory of value.

The controversy over marginal or average costs as a basis for price formation is not a new one, and goes back over a century. Marx made himself completely clear on this question, when he wrote in a footnote to Volume III of *Capital* as follows:

> The controversy between Storch and Ricardo, incidental to their discussion of ground rent (a controversy which is merely referring to the same object, while the two opponents take no notice of one another) whether the market value (or rather what they call market-price and price of production respectively) is regulated by the commodities produced under the least favourable conditions (Ricardo) or by those produced under the most favourable circumstances (Storch), resolves itself into the fact that both are right and both wrong, and that both of them have left out of consideration the average case. [9]

Marx hence rejected as a general basis the idea that the extreme conditions (either the enterprises producing most expensively or most cheaply) in which part of given commodities were produced, regulate its market value. Marx defined his position on this question many times. Thus, for example, he wrote in a letter to Engels of September 9, 1862, that 'Ricardo always maintains—what is theoretically erroneous—that independent of market conditions

[9] K. Marx, *Capital*, Vol. III, p. 216 ff

commodities produced under *the least favourable* circumstances regulate the market value'[10]

The viewpoint that market value, and consequently that average conditions, regulate prices, and not marginal conditions of commodity production, led Marx to the logical conclusion that commodities produced under worse than average conditions, are sold at lower profits than those produced under average conditions (and often even at a loss). Marx adduced an excellent argument in refutation of the theory that marginal costs are the point of departure for price regulation, when he wrote: 'It does no good to say that the sale of the commodities produced under the most unfavourable conditions prove that they are required to keep up the supply. If the price in the assumed case were higher than the average market value, the demand would be smaller.'[11]

Hence, if prices were fixed on the basis of marginal costs, an absurd price system would ensue, in which there would be a lack of demand (purchasing power) on the part of production workers for the produced commodities.

To base them on marginal cost will result in not adjusting prices to production costs and accumulation and in violating the fundamental concept that prices equal $c+v+m$ when in fact the surplus product m, incorporated in the price, will be greater than the surplus product actually produced.

The partisans of the marginal costs basis of price formation cite the argument used by Marx, to the effect that the values of mining and agricultural products—due to the existence of a monopoly of the land—are determined by the prices of enterprises producing under the most unfavourable conditions, i.e., by the costs of the marginal enterprises. This argument, however, is based on a serious misunderstanding which results from incorrectly distinguishing between the concepts value and market value. In agriculture as in industry, value is formed on the basis of average conditions. Whereas, the market value of agricultural products (not their value) are formed on the basis of marginal conditions.

To state that in industry value is formed on the basis of average conditions and in agriculture on the basis of marginal conditions

[10] K. Marx and F. Engels, '*Listy o Kapitale*,' (Letters on Capital), Warsaw, 1957, p. 100.
[11] K Marx, *Capital*, Vol. III, p. 210.

is to say that the same amount of labour power creates more value in industry than in agriculture. Let us assume for example, that to produce a given number of units of the same product in 3 enterprises of the same production branch requires 8, 10 and 12 hours respectively. The value of a unit will be 10 and of 3 units of the product 30. Then, the same amount of labour power (8, 10, or 12 hours) on 3 different farms, should produce—according to the partisans of the above argument—unit values amounting to 12 hours, and 3 units to 36 hours. But this would be absolutely inconsistent with the Marxist theory of value, according to which the same amount of labour power can only produce the same magnitude of value, and labour productivity cannot affect that magnitude.

Let us see now what Marx wrote on this question. In the *Theories of Surplus Value*, while discussing Ricardo's mistakes in the sphere of absolute ground rent, Marx maintained that it is impossible for

> One and the same quantity of labour (immediate and accumulated) —from the consideration of all equalisations which take place among different capitals in consequence of their diversity resulting in the process of circulation—to create greater value in agriculture than in industry. If that is accepted, then the values of commodities would not be determined by the labour time incorporated in them. This would demolish the whole foundation of political economy.[12]

It must be remembered that the conditions for fixing prices of mine industry and agricultural products on the basis of marginal costs—hence also prices received by enterprises working under the most profitable conditions—are that the prices of other products must because of that be fixed correspondingly lower. Only by society paying tribute can mining and agricultural products procure high prices. It is actually excluded, however, that high prices could be fixed on all products on the basis of marginal conditions; since there would then ensue a lack of demand for an appreciable portion of these products.

The partisans of the idea of basing prices on marginal costs state that this assures economy of products, because high prices compel buyers to use 'substitute' products. But if that were the case, then it would not be possible to apply marginal costs as a basis for price

[12] K. Marx, *Theories of Surplus Value* (Russian ed.), Part II, Moscow, 1957, p. 235.

formation, because it would be in contradiction to the objective operation of the law of value in socialist economy. But such is not the case. Even if we should imagine that prices do rest upon marginal costs, then that would not lead to economising on products. On the contrary, economic decisions would be entirely irrational and accidental. Decisions to apply one or another means of production are primarily decisions of planned investment, and are hence undertaken under dynamic conditions, i.e., over the long range. Let us assume that we have two alternatives in undertaking to build a factory. One is based on adaptation to raw material x, the second on y. If the prices of the raw materials were set on the basis of the cheaper grade—hence on the basis of low marginal costs— then that would lead to basic mistakes. Actually, however, the second raw material type may be cheaper in fact. Here it is necessary to consider the fact that the relation between marginal costs and that between average costs may be (and as a rule are) different for different products. Prices resting on marginal costs are as a rule short-range prices. Contemporary bourgeois political economy acknowledges that marginal costs equalise with average costs over the long range. It is therefore clear that the adaptation of short range prices to actual marginal costs in long range investment decisions may lead to serious errors.

The conception of prices resting on marginal costs in short period decisions pertaining to 'replacements' may also lead to serious mistakes. First of all, the 'replacement' may embrace not a part, but all the high price products, or an important part of them, and there may be a 'replacement' by products of either higher marginal costs or lower average costs. It may truly be maintained that there will be a fall in the prices of products whose consumption is smaller, in the case of 'replacement'; still, decisions to 'replace' one product by another are connected with given organisational means, and cannot always be adjusted to price changes which ensue in very short periods. We do not speak here about the fact that continuous price changes would be an unusually costly burden on the national economy, and that the whole conception of the 'replacement' of one product by another would be unreal, since it assumes the existence of production reserves in different branches of production (which is not the case in our conditions), besides the technological possibilities of such replacements.

The question arises what social function can the theory of basing prices upon marginal costs fulfil if it is not possible and is not applied anywhere? Such a theory is unusually profitable for capitalists, since it motivates the need for high prices, low wages and high taxes. But this theory is certainly in contradiction to the basic socialist economic concepts, and to the interests of the working class which require low prices and high wages.

The conception that it is necessary to abolish the so-called double level prices and to fix prices on means of production in the same manner as on means of consumption, is either an attempt to transplant the method of price formation in pre-monopoly, capitalism, or it is based on a misunderstanding. Acutally, there do exist very many price levels in contemporary socialist and capitalist economies (prices of socialised industry articles, subsidised prices, prices of basic and higher grade articles, prices of imported goods, utility prices, monopoly and non-monopoly prices, etc.). This is not, however, most important. Abolition of the so-called double level prices would mean a policy of high prices of means of production. The above-stated theory of so-called alternative costs is entirely omitted here. We can add that in pre-war Poland, in which the prices of means of production incorporated 'normal' or even above 'normal' capitalist profit, it was not generally profitable to apply new techniques, due to the high prices of investment goods and low wage level. It is characteristic that modern capitalist countries attempt to a certain degree to apply a policy of low prices on means of production (this is revealed primarily in the fixing of lower prices by the nationalised industries producing combustible raw materials and electric power.)

I would like to say in conclusion, that the methods of economic accounting and economic choice in socialist economy cannot be based on the importation of capitalist methods, nor on the false theoretical postulates of bourgeois political economy; but they must be Marxian methods, i.e., they must consider the specific conditions of socialist economy and the realities flowing from them.

10

AGRICULTURAL PRICES

Maksymiliaan Pohorille

THIS ARTICLE deals with several problems which arose in the course of discussions of the basic principles determining agricultural prices. Solving execlusively the problem of producers' prices overlooks the question of consumers' prices. This is why I do not to put forth in this article in a developed form the basic theoretical problem of the relation between the prices and values of agricultural produce.

It does not follow from Marxist theory—at least in my judgement—that prices have to be synonymous with values in a socialist system.[1] The very appearance of the price form establishes the necessity of price deviating from value. Marx emphasised this more than once. According to Marx, the price of each individual commodity does not correspond to its value, but the sum of all prices is equal to the sum of all commodity values. This formulation was objected to as being a tautology.[2] In reality, however, it expressed an important idea.[3] Writing about the equivalence of the total sum of prices and total values, Marx underlined that the sum of profits attained by the capitalists could derive only from the production process. That sum is equal to the total surplus value produced by the workers, and it determines quantitatively the magnitude of average profits.[4]

An analysis of commodity production in its totality is necessary

[1] Thus the critique of the Marxian theory of value by Joan Robinson in *An Eassay on Marxian Economics* entirely missed the point. The thesis that according to the Marxist theory of value the individual values of all portions of land ought to be equal, and that price ought to be the equivalent of value, is without any foundation.

[2] Böhm Bawerk, '*Zum Abschluss des Marxschen Systems*', Festgaben fur Karl Knies, Berlin, 1906.

[3] This was already brought out by Hilferding in his polemic with Böhm Bawerk. See Hiflerding, '*Böhm Bawerk Marx-kritik, Marx-Studien*,' Vienna, 1904.

[4] See K. Marx, *Capital*, Vol. III. pp. 685-86.

for an explanation of the problem of income distribution among the social classes. One will not be in a position to grasp reality by limiting oneself to concrete observations relative to sypply, demand or prices and to the connections between their magnitudes.

It may be thought that supply and demand are autonomous phenomena, which are independent of the law of value. In that case there would be a basis for the assertion that prices are determined by the law of value—in its exact meaning—on one hand, and by the law of supply and demand on the other. But such an interpretation does not make sense. The so-called law of supply and demand could not manifest itself outside the limits set by the law of value, determined by labour.

How much labour society may devote for the production of individual commodities depends in the last analysis on the socially indispensable general expenditure of labour power.[5] Income and price levels play a decisive role in the structure of effective demand.

The selection theory is a bit too formalistic to explain price formation. It is not sufficient to answer the question how the selection comes about. It is necessary in the first place to explain why there is a question of selection. For, the need for a choice springs primarily from possibilities, i.e., from the level of income.

The Marxian theory of value does not provide a direct answer to the question of how to fix prices in our economy. The answer must, however, rest upon the Marxian value theory of prices.

The Tasks of Price Policy

The question of an agricultural produce price policy usually poses a series of tasks. These may be put as follows:

(*a*) To influence in a determined direction the distribution of the national income between the agricultural and non-agricultural populations as well as among individual rural social groups;[6]

[5] Certain commodites are dear, shows Marx, not because they are scarce, but they are scarce because their production requires large expenditures of labour power.

[6] The order of priority of aims may be discussed. I have no faith, however, in the furitfulness of such controversies. One thing, however, is certain: the problem of agricultural prices cannot be considered one-sidedly, from a

(*b*) To chart the directions of production and to obtain the optimum benefit from the production factors in agriculture;

(*c*) To accelerate technical progress and intensify the agricultural economy;

(*d*) To influence the development of the consumption structure.

One often meets with the opinion that there is a contradiction between the first task and the others enumerated above. This is why many economists express the opinion that price policy should not be considered as a task related to the distribution of the national income (in their opinion it is a task to be realised in connection with the taxation system). In practice, however, it is not possible to ignore this task when the tax system cannot adequately solve the problem of national income distribution. Of course, the price system by itself is not in a position to solve this problem. It is, however, the essential element in the joint determination of the national income distribution by several factors.

The necessity of harmonising price policy with other forms of influencing agricultural production—taxation system, credits, rural production aid, organisation of the market for agricultural produce—springs from the possibility of the emergence of contradictions between different aims of the price policy.

The correct distribution of the national income between the agricultural and non-agricultural population groups depends upon the maintenance of a defined price level of agricultural produce (in relation to prices of industrial goods). The possibilities of price policy affecting income distribution among rural groups are limited; but they must not be ignored (the preference of certain directions of production, prices of food and breeding materials).

It is necessary to underline that price policy always bears a distinct classical character. It is easy to show that in the pre-war period

narrow economic viewpoint. It must not be forgotten that the interests of the two main classes of our society are involved—the interests of the working class and the peasantry. It is difficult to ignore the fact that certain contradictions may arise between the peasantry—as sellers of bread—and the workers as their customers. The people's power must resolve such contradictions in a practical way so as to strengthen the working class-peasant alliance. It must consider the strictly economic incentives of the petty producers, and by relying on these incentives increase agricultural production and create conditions for the construction of socialism on the countryside.

export subsidies as well as the limitation of certain vegetables (sugar beet, for example) served the interests of the large agricultural economies. It is likewise not difficult to realise that the big farmers have been carrying on a furious struggle against regulation of agricultural prices in all capitalist countries.

Regulation of Agricultural Prices

Under conditions of planned economy, the state regulates agricultural prices. This consists of (*a*) the direct fixing of the prices of certain basic products and (*b*) influencing the market with the aim of maintaining prices within defined limits.

Decreed prices[7] may be rigid, or they may have the character of minimum or maximum prices. The effectiveness of decreed prices lies in the possibility of state regulation of supply and demand. Attempts to decree maximum prices under conditions where the state does not control the markets, do not usually yield positive results. They lead to reduced sales on the legal market and their expansion on the so-called black market. This does not mean, however, that all administrative means of struggle against speculation are ineffectual.

It is necessary to bear in mind two fundamentally different situations when we speak of the state fixing of agricultural prices:

(1) Where the state is the only or main buyer of agricultural produce (grain, industrial crops) and disposes of corresponding reserves enabling a far-reaching market control;

(2) Where the state buys a certain quantity of products, but a very important part of the mass of goods goes through the private market (where direct transactions take place between producers and consumers, or where buyers and small private merchants also participate).

In the first case, i.e., in the case of a formal or actual state

[7] Decreed prices are those fixed by the state. This term should not suggest that the state may set prices at will. The state cannot eliminate the dependence of producers' prices on the economically reasonable price level of retail consumers' goods. This applies particularly to products whose manufacture is not very complicated and which can be easily obtained in any market place. Only in relation to certain groups of agricultural produce (for example, industrial crops) can the state apply a purchasing price policy independent of retail prices—of finished production.

purchasing monopoly, the fixed state prices are actually decreed prices, which the producer must submit to whether he likes to or not (or go out of business).

In the second case, however, the state can only influence market prices indirectly. We must warn here against a misconception of the function of price fixing under such conditions. The role of the state in nowise consists of a passive accommodation to the private market conditions. The view that the state is entirely powerless when price equilibrium is determined by supply and demand is oversimplified. The state and cooperative trading organisations may through their policies exert a determining influence on the market and prices.

When we speak of state price fixing we have in mind direct producers' prices, not those admitted by purchasing organisations. The difference between them consists of the following:

(1) Prime prices (which we call decreed prices) have to be fixed as a rule before the farmers make production decisions (generally at the beginning of the economic year), whereas the secondary prices (which we call purchase prices) have to be more elastic. The mechanism for setting them has to ascertain the possibilities of the purchasing apparatus reacting to changes in market conditions.[8]

(2) Decreed prices are as a rule guaranteed[9] —although this principle is not binding in all situations. The setting of purchase prices must not necessarily indicate a guarantee of the acquisition by the state of every quantity of agricultural produce offered.

The state refrains from fixing the prices of certain products only when it is indispensable to the interests of society. Realisation of the aims delineated by price policy is then subordinated to both the organisation of the market and to the state reserves programme.

[8] To avoid misunderstanding it is necessary to underline that we are concerned here with decreed prices in state-controlled markets and with purchase prices in the other markets. For example, the prices of grain and sugar beets fixed by the state are binding on farmers if the state is the principal or sole buyer of these products. Whereas, by setting of maximum prices which a purchasing organisation may pay for potatoes, for example, the state really influences the market but it does not decide market prices.

[9] The fixing of prices is not synonymous with their guarantee. We can speak of gnarantees only in the case when the state assumes the obligation to acquire the given products after setting their prices. Guarantees may pertain to the entire mass of products offered, or only to a given quantity.

Short and Long Range Equilibrium of Decreed Prices

Many economists are decidedly against state price fixing. In their opinion, decreed prices are either the same as those equilibrating supply and demand—in which case decreeing prices is altogether needless (*'fausse taxe'*)—or else they are higher or lower than equilibrium prices—in which they are obstacles to market equilibrium. Hence, if we suppose that decreed prices ideally balance prices formed by the free play of the market, then the former has the clear advantage over the latter inasmuch as it releases the producer from an atmosphere of uncertainty, and at the same time creates a rational basis for economic accounting.

It is difficult, however, to consider a situation in which the state decrees prices on the same level at which they are formed without outside intervention, as typical. There is seldom a situation when the state imposes agricultural prices despite market automatism (the free play of market forces). The arguments of the opponents of decreeing prices are thus directed mainly against its practice. Are they correct?

The principal mistake of the market automatism adherents is that they ignore the *time factor* in their considerations. They hence ignore all complicating elements and distorting operations of automatism which in effect should lead to the restoration of the disturbed equilibrium.

Decreed agricultural prices over an ultra-short period can exert only a limited effect on sales.[10]

The volume of sales of agricultural produce is mainly determined by the size of the harvest of the previous year.[11] That magnitude is not dependent on the price level.

Of course, the sales of agricultural produce in a given year are not equal to the volume of production. Two additional magnitudes

[10] Ultra-short period must be understood as a fairly short period during which there can be a change in the sphere of production. In a short period producers are in a position to produce additional goods; but they cannot change the corresponding rotation system, nor effect serious changes in the instruments of labour.

In a long period the instruments of labour as well as the cultivation structure changes.

[11] Countires importing agricultural produce must of course include the volume of imports in their reckoning.

are involved here—the personal consumption of the agricultural producers and the changes in the state of reserves.[12].

The effect of decreed prices on the reserves of small economies is relatively small under the following conditions:

(*a*) When the bulk of the produce spoils rapidly;

(*b*) When the production of larger reserves is related to costs and requires special equipment;

(*c*) When the accumulation of reserves over a long period (this mainly concerns grain which in small quantities does not require special equipment) requires financial reserves

The thesis regarding the operation of psychological factors (anticipating further price increases or declines) in the case of transition to decreed prices, is controversial. The operation of these factors depends upon the general economic and political situation of the country. Transition to the practice of decreeing agricultural prices may operate to stabilise the market as well as to stimulate speculation. As experience shows, both the rise and fall of prices are often the causes rather than the effects of state price fixing.

Price changes may exert an influence on the division of peasant production between commodities and the part destined for personal consumption but it is difficult to foresee if in the final analysis peasant production for the market will rise or fall.

Apart from entirely exceptional situations (a war period, for example) it is difficult to figure out if setting agricultural prices by decree may lead to a greater shrinking of commodity production or also to a vast shift in market production previously consumed by the economy. Certainly, lower prices cannot encourage the peasants to consume more eggs, for example. It is likewise easy to imagine the opposite situation—where relatively high agricultural prices enable the purchase of the same quantity of industrial goods as formerly, with a smaller quantity of agricultural produce, and

[12] As concerns fodder, it is also necessary to consider the volume of productive consumption in the agricultural economy. In the case of changing price relations between feed and grazing fodder, there is also a change in the number destined for fattening by grain or potatoes. There is no doubt that in very short periods changes in the supply of individual agricultural products depend mainly upon the possibility of their transformation by the peasant economies. The gross supply of agricultural produce will not, however, undergo any great change.

that also makes it possible to designate a greater quantity of products for personal consumption.[13]

Changes in the peasants' personal consumption are mainly determined by two factors: (1) the production volume, and (2) the need of certain cash sums to cover current economic expenditures, long term debts, taxes, etc. Peasants are compelled to sell given quantities of products in order to obtain indispensable financial means.

In ultra-short periods demand for agricultural produce—at least for the vast bulk of it—is distinguished by relatively great inelasticity.[14]

The situation in an ultra-short period is thus as follows: on one hand, inelasticity of supply; on the other, inelasticity of demand. When supply exceeds demand at given prices, the absorption of the surplus produce requires a large price decrease, when demand is greater than supply, a large price increase follows together with an appreciable rise in the cost of living. Hence it follows that a relatively insignificant intervention in the market may have fairly serious effects on prices.

Protection of the interests of both, producers and consumers, thus requires state intervention in the market. The most efficacious means of intervention is the manipulation with the agricultural reserves in the hands of the state. The problem therefore is not that prices fixed by the state should not deviate from equilibrium prices, but to create conditions for market equilibrium.

Is it expedient to resort to decreeing prices when the state possesses economic means to influence the market? In certain cases, yes. This applies primarily to such a basic product as grain, for example. In a number of countries state grain monopolies have been instituted in order to prevent the harmful market fluctuation of prices and all resulting speculation (state intervention without decreeing prices cannot eliminate the fluctuation completely; it

[13] Such a situation chiefly appears when there is a lack of industrial goods on the market, attractive to the rural areas.

[14] The solution of the question of personal consumption in the peasant economy relates to the gross volume of consumpton, not to its structure. The demand for individual agricultural products exerts a certain influence on the peasants' decision regarding the substitution of some consumption goods for others. The substitution phenomenon in the sphere of peasants' personal consumption results in the increased elasticity in sales of agricultural produce. Despite this, however, the sales of the vast bulk of agricultural products are relatively inelastic, or in the case of ultra-short periods absolutely inelastic.

may only limit its range). Where a state monopoly exists, decreed prices are a matter of course.

The problem of dual agricultural prices, namely, those paid by the consumer and those received by the producer, requires special consideration.

There is a contradiction over the short range between the great variability of supply and weak elasticity of demand.[15]

Under conditions of the free play of economic forces, fluctuation of the size of the harvest carries with it a tremendous fluctuation of agricultural prices. This phenomenon is very unfavourable for farmers, who because of it sustain not only a technical risk (decline in the harvest) but also an economic risk (fall of prices). It may properly be thought that the effects of the 'fat' and 'lean' years mutually balance each other, thus providing agricultural economy with a certain assured equilibrium. But this is, however, far from reality.

The situation of many peasant economies (middle and poor) is often shaky. It is not easy to return to a state of equilibrium if, in a certain year the peasant is hit from two directions—by bad crops and fall of prices. During periods of the rise and fall of prices the gains and losses by no means extend equally for the whole peasantry. There can be no doubt that price fluctuation primarily hit the weakest agricultural economies.

As in the ultra-short period, the only effective way to counteract these negative phenomena is to manipulate the state reserves. In relation to this the question arises if state market intervention and influence on price formation (particularly state price fixing) do not harm the emergence of equilibrium over the long range. In other words, does price formation on a level determined by automatic equilibrium (without state intervention) bring us nearer to, or remove us further from actual equilibrium over the long range?[16] The answer appears to be clear. The fact that the influence of demand variations on prices is interwoven with the effect of fluctuating sizes of harvests upon the market (in years of good or bad crops) complicates and renders difficult the process of adapting

[15] See J. Milhau, '*Traite d Economie Rurale*', Presse Universitaires de France, 1954.

[16] Involved here is the question of adjusting the rate of production development to changes in consumption demand.

agricultural production to the demand structure.[17] Let us assume a countrywide poor harvest in a given year—or 2–3 years in a row—with fairly plentiful crops only in certain regions. Farmers in such regions gain the possibility of selling more produce at higher prices than in the preceding period. Favourable prices will encourage them to expand production. They will not reckon with the actual cause of the rise in prices and will react in the same way as if the price increase ensued from a rise in demand.

Hence, the correction of market automatism and elimination of the often violent price fluctuation—resulting from the fluctuation of the size of crops—are advantageous not only from the viewpoint of assuring large social groups with a certain degree of real income stability. They are also profitable from the viewpoint of the proper orientation of the producers and for the adjustment of production to the demand structure.

The above solution applies to agricultural production in general. A more concrete treatment of the problem requires a differentiated approach to different groups of agricultural products, since demand elasticity is not the same for different products. For example, the demand for grain is inelastic, for fruit relatively elastic. Hence, the menace of a vast fluctuation is not the same on all markets. Nor is the effect of fluctuation similar for producers' and consumers' incomes. A rise in the price of grain clearly has an entirely different significance for the economy as a whole than an increase in the price of fruit. The price and reserves policies must also consider the effect of given prices on the development of other branches (or divisions) of agricultural production. The 'pendulum swing' of grain prices has a real effect on livestock breeding, milk production, calf raising, etc. It is not necessary to prove that the lack of stability of conditions for production is a negative phenomenon.

The possibilities for the state accumulation of agricultural reserves and thier manipulation are of course limited. Due to this fact, attention must be concentrated on the so-called diminishing markets and products which do not spoil rapidly (price stabilisation relates therefore primarily to fodder).

[17] See M. Pohorille, 'On the Connection Between Different Elements of E conomic Policy as Related to the Countryside', *Gospodarka Planowa*, No. 7–8, 1957.

Besides being needless, attempts to decree prices for all agricultural products will encounter insurmountable difficulties.

Changes stemming from supply in short periods result not only from variations in the size of crops. Agricultural producers undoubtedly carry out a certain shift in production, in the endeavour to expand the better paying branches at the expense of the less profitable.

The field of manoeuvrability which requires crop rotation is, however, limited to reckoning only profitability and is immensely complicated. The problem of supply elasticity of individual agricultural products requires scrupulous analysis. Here we limit ourselves to the formulation of the following two theses:

(*a*) The fluctuation of good harvests bear a dominant importance for the volume of supply in short periods;

(*b*) By means of price policy the state may exert a certain influence on the volumes of production and supply of individual products only when it brings about a relatively higher change in prices and when that change shows signs of stability.[18]

Over the long range fluctuation in the size of crops loses its significance. The line of development of agriculture is clearly delineated: the increase or diminution of crops per *ha*, the rise or fall per capita, the expansion or shrinkage of the area under cultivation for individual plants, intensive or extensive agriculture. The relation between prices and costs is also distinct. The experience acquired by an initially small group of producers who achievea change in the production structure with the objective of increasing the profitability of their farms, becomes generalised among a larger mass of producers.

Thus, in the long range some important traits which differentiate agricultural from industrial production (namely, the impossibility of precisely calculating own costs by anticipation, the intertia resulting from the small producers' fears of the risks connected with changing the direction of production) cease to play so precise a role as in short periods. It likewise cannot be doubted that prices exert an important influence on the direction and range of agricultural production.

Correct or mistaken principles of price policy may not induce

[18] Here we omit means of influencing agriculture outside the sphere of prices.

greater changes (positive or negative) in the shape of agricultural production in the short range. Over the long range, however, the effects of one or another price policy make themselves felt with the irresistible force of necessity.

Manipulating reserves—efficacious and necessary in very short and short periods—does not in the slightest degree help to solve the problem of equilibrium in the long range.

Of course manipulating reserves does not provide a way out in the case of a grain deficit.

Securing equilibrium between supply and demand of agricultural produce over the long range is not possible by the poor range of means at the disposal of price and reserve policy. The incommensurability here of aims and means are stirking:

(1) The problem of equilibrium between production and consumption of agricultural produce is indissolubly connected with the question of the essential proportional development of the entire economy. It is consequently impossible to solve it without resolving the problem of the proportionate development of industry and agriculture, of the proportional division of the national income (which have a decisive effect on the formation of demand and on productive investments in agriculture) and of the foreign trade structure, etc.

(2) As a consequence of the greater inertia of the production factors than is the case in industry,the application of a much richer range of means is also required to influence agricultural production.

(3) Prices play a substantial role in achieving a proper choice of direction of agricultural production. But it is necessary to stress here that price formation, under the influence of the extemporaneous activity of the production factors, makes it difficult to adjust agricultural production to the social consumption needs. Only the price formation which takes into consideration equilibrium conditions over the long range can play a positive role.

(4) The violent fluctuation of agricultural prices makes difficult the adjustment of production to the demand structure since it prevents a rational economic calculation on the part of the farmers.

Specific Traits of Price Formation in Agriculture

The level of agricultural prices (involved here are clearly

relative prices, i.e., the relation between agriculture and industrial prices) has an important effect upon the division of the national income. This problem must of course be considered in relation to the question of the tax burden of the rural and other areas.

It is not possible, however,—as indicated above—to agree with the viewpoint that it is necessary to limit oneself to the consideration of the agricultural price function in organising production and consumption; while transferring the task of income distribution entirely to the taxation system. The basis of the tax level on individual agricultural economies cannot be the volume of goods they produce, but only the calculated income from their farms. Hence, the taxation system is somewhat too inprecise and inelastic to fulfil the role of the *only and total* instrument of income distribution.

Agricultural prices are and must be the essential co-determining element of national income distribution.

Ground rent is one ingredient of the value of agricultural produce. It plays an active role in the whole production process. A rise in price of agricultural produce induces (in conditions of the free purchase and sale of land) an increase of rent and land prices. From the viewpoint of farming, expenditures on land purchase constitute an element of constant costs. If the stability of a series of economic charges is coupled with a great change in agricultural prices, serious fluctuation in income follows. The appearance of rent differentiation emerges from the monopolisation of land as a farming objective. It is a factor in the differentiation of agricultural economies. To contract rents by means of the taxation system is a complex question, and not easy to realise.

A specific characteristic of agricultural prices is that they are subject to violent fluctuations under conditions of free competition. Farmers' income is also subject to great fluctuation simultaneously with that of prices.

One of the principal causes of this fluctuation is the great variability of supply in relation to the inelasticity of demand for articles of consumption. The violent fluctuation of agricultural prices has little connection with the long range trends of production costs and the essential changes in the social demand structure—to which the development of agricultural production has to adjust itself.

In capitalist countries the chief cause of price and income

fluctuation is brought about by the effect of unstable conjunctural changes on the demand for agricultural produce on the one hand, and by the relatively great inertia of agricultural production factors on the other hand. Under our conditions, agriculture is not threatened by conjunctural changes. Different problems emerge however. A rapid rise in the people's cash income in a period of industrialisation, may bring about the phenomenon of the rate of growth of demand for agricultural produce getting ahead of the supply. Hence the tendency for a rise of agricultural prices and distortion of true proportionality in the national income division.

Despite the viewpoints of some economists, market automatism is highly imperfect with regard to regulation of the production and consumption of agricultural produce. A classical example is the so-called 'hog cycles' observable in the agriculture of many capitalist countries. For a long time economic texts maintained the thesis that under conditions of free competition every disturbance which takes the price movement and production level outside the limits designated by the point of intersection of the supply and demand curves, sets in motion the forces which restore the state of equilibrium. Actually, however, those forces are set in motion which in certain conditions induce continuous fluctuation around the equilibrium point. In other cases they set in motion gradual convergence towards the point of equilibrium (converging fluctuation); and in still other cases, divergence from the equilibrium point (diverging fluctuation).

In agriculture there is a contradiction in time between the process of production and that of realisation. In contrast to industry, adaptation of agriculture to market demand requires a long period of time. In conditions of free competition every reaction to prices of the past period leads to a diverse market situation which is characterised by continuous disproportions in one or another direction.

The transposition of agricultural production confronts many difficulties. One of them is related to natural and technical conditions in which agricultural production finds itself. Other difficulties flow from the petty commodity character of peasant production and from the customs and production habits of small farmers.

Different types of farming (capitalist, middle, poor, as well as various groups within the framework of this basic division) are tied to the market in different fashions. The development of some farms takes place under the strong influence of changing market conditions, while others react weakly or hardly react at all to price stimuli.

We must realise the enormously complicated character of the reaction of agriculture (particularly of peasant farming) to prices. Branches of agricultural production are organically connected. The appearance of direct connections between the production of different agricultural articles must have a complicated effect on the relations between the prices and supply of individual products.

In agriculture the relations between prices, costs and production levels take shape differently than in industry. Farmers are not in a position to plan unit production costs in advance for they cannot foresee precisely the size of the harvest. Nor are they in a position to adapt the production level and costs to changing prices—when they are lowered. In agriculture we are confronted with a relatively higher proportion of constant costs to total production costs than is the case with industry. Limiting agricultural production does not lead to an important reduction of costs since the bulk of expenditures must be sustained even before the production cycle begins and is independent of the volume of production. Characteristic for agriculture is the high proportion of expenditures on living labour to the gross production outlays. This is particularly the case with the costs account sustained by peasant farming. The cost of maintaining the peasant's family may, on the one hand, be treated to a great extent as a constant cost; but it is, on the other hand, actual farm income which represents the magnitude resulting from the nature of its dependence on prices and crops in the peasant economy. The adjustment of labour costs to a declining price level is made not by way of lowering labour input, but by reducing wages.

The relative stabilisation of prices is of importance to the working class and to the branches of industry utilising agricultural raw materials as much as to the farmers themselves. Elemental price fluctuation collides with the planned character of the economy and exposes the farmers to serious losses. A decline in prices of agricultural products hits the farmers in two ways: (*a*) with a decline in

the profitability of agricultural production; and (*b*) with a greater debt burden. In the final analysis a rapid rise in agricultural prices also rebounds adversely on the farmers. They stimulate the whole mechanism of speculation with agricultural products as with land. The profits flow to an insignificant group of speculators in the towns and rural areas, whereas the working farmers feel acutely all the negative effects for the whole economy which are induced by a violent price increase of agricultural produce.

All the above considerations point to the necessity of the regulation of agriculture by a socialist state. 'The free play of forces' on the agricultural produce market is neither in the interests of the working people in town and country, nor of the development of agricultural production and of the economy as a whole.

Prices and Cost Accounting

The question arises if it would not be correct to take the calculation of unit production costs as the point of departure in fixing agricultural prices. Such attempts confront technical difficulties as well as theoretical reservations of a basic character. Very many such reservations arise,[19] of which the following principal ones may be mentioned:

(1) Individual branches of agricultural production are organically connected with each other. The ultimate result of the economic activity of an agricultural enterprise is not the ordinary sum attained by an individual part of the economy which develops independently. It rather depends to a very large extent upon the proper association of production branches. Unit costs depend not only on expenditures, but also on the size of the crop, which in turn depends on the condition of crop rotation. It is therefore difficult to include the effect of plants on the soil in cost categories.

(2) One of the weak sides of unit cost calculation is the conventional character of many accounting items. The estimation of non-commodity production is conventional. Also conventional is the assumption of the method of division which serves as a key

[19] See Schmalenbach, '*Grundlagen der Selbstkostenrechnung und Preispolitik*', 1930; Aeroboe, '*Landwirtschaftliche Betriebslehre*', 1923; Manteufel, '*Jednostkowe koszty wlasne w rolnictwie na przykladzie gospodarstw panstwowych*,' *Ekonomista* Nos. 4–6, 1955.

for the individual cultivator sharing the burden of general costs, and finally, the division of outlays in the case of combined production.

(3) There often occurs in agriculture not only combined production but also combined economic activity. The time in which different economic tasks are performed plays an important role. It determines in large measure the size of the harvest (hence costs) and the utilisation of labour power.

(4) There is a wide gulf in agriculture between production costs depending upon the soil quality, state of the economy, its range, disposition of technical equipment and intensity level, etc. Hence the problem arises which costs to consider.

(5) With equal inputs per production unit and equal prices, the conditions of profitability will basically differ for individual farm groups depending upon the magnitude of labour power used on the given land areas.

(6) Estimation of the farmer's own labour and that of his family will pose great difficulties.

In my opinion, all the above reservations do not demonstrate what the adherents of a synthetic calculation[20] attempt to prove, namely, the complete uselessness of estimating unit costs (and the profitability of individual branches of agricultural economy). Actually, with all the conventionalities and inaccuracies, the results of unit cost calculation are very important for evolving a proper price policy. Unit costs obtained by means of a method of separation (and by making a series of assumptions) *cannot directly serve as a basis for setting agricultural prices. They may, however, provide important and indispensable data for a profitability analysis and for determining the proper relationship between the prices of individual agricultural products.* Of basic importance in this case are not so much absolute magnitudes—which we must approach with great care, taking into consideration all deficiencies of the accounting method—as the direction of the changes brought about in costs and prices. An analysis of production costs in different parts of the country—for a cross-section of classes and over the space of a number of years—provides a basis of comparison from which

[20] The adherents of synthetic calculation consider it necessary to analyse the profitability of agricultural economy in its totality. In their opinion, calculation of the profitability of individual products is bereft of sense.

flow important conclusions for price policy and for rationalising agricultural production.

General Agricultural Price Level and Price Relations

The separate consideration of the prices of individual products is of a very limited importance. Faced with the need of a choice between different possible ways of utilising the production factors at their disposal, farmers are guided in their decisions not by the absolute price magnitude of one or another product, but by the *relative profitability* of agricultural production branches. Hence, of decisive importance for the disposition of agricultural production factors are the relations between the prices of agricultural products (if we assume production costs as given) as well as the price relation between agricultural and industrial goods which are required by the countryside.

It is necessary to bear in mind that agricultural producers react in a fundamentally different manner to a general change in the price level than to changes of individual prices. The phenomenon of a negative supply elasticity often follows a general decline of agricultural prices. In a period of crisis this decline in many cases does not induce a fall in agricultural production. A decline in price of one or several products (assuming *ceteris paribus*) incline farmers to undertake attempts at more profitable production. This does not mean that they can ignore the problem of the relation between separate prices of agricultural products and their general level. The general level of agricultural prices determines the real income magnitude of the agrarian population, and the levels of consumption and accumulation of the agricultural economy which flow from it. Moreover, the rate of development of agricultural production in turn depends on accumulation. Even if farmers react to a price decline on their produce by increasing production (this happens mainly as a result of increasing their own labour input in petty commodity economies) then over a certain period a fall in agricultural production, brought about by the exhaustion of the farmer's vital energies, will be unavoidable. Furthermore, an appreciable narrowing of income must lead to a diminution of outlays on fertilisers, on means of plant protection, agricultural equipment, etc. Even the phenomenon of de-capitalisation may appear in the defined situation.

It is also necessary to consider the second aspect of the above question. A violent change in the general agricultural price level (price collapse during crises or inflationary price spirals) makes a rational economic accounting impossible for farmers. It is not possible to foresee the effectiveness of sustained outlays with great price changes. In this situation, the relations between the prices of individual products loses significance and prevents a correct choice of the direction of agricultural production which is most desirable from the viewpoint of the demand structure.[21]

Hence, to influence agricultural production by means of the correct formation of price relations requires the relative stabilisation of the general price level.

As concerns agricultural and industrial price relations it is necessary to distinguish two relations which play entirely different economic roles: (*a*) the relation between the agricultural price index and the index of means of production required by the countryside; (*b*) the relation between the price index of agricultural articles and the price index of the means of consumption required by the rural areas.

It would be incorrect to mechanically tie the agricultural prices (this concerns of course state-fixed prices) to one of these indexes or to both.

The proportionate raising or lowering of all agricultural prices on the basis of changes in the price index of industrial goods required by the countryside, would be an operation without an economic foundation. Changes in agricultural prices cannot be separated from changes in production costs, in supply of agricultural produce, as well as changes in the demand elasticity of individual products.

While rejecting the conception of parity prices, I do not wish to negate or belittle the importance of a systematic analysis of the price relations between the goods sold and those required by rural areas. These relations provide a general orientation as to the situation in agriculture. They are, however, inadqeuate for a detailed estimate of the farmers' condition—their incomes or purchasing power. That purpose also requires data concerning the size of crops, production costs, taxes, etc.

[21] See T. D. Scitovsky, 'Capital Accumulation, Employment and Price Rigidity', *Review of Economic Studies*, Vol. VIII, 1940-41, p. 75.

In my opinion, an attempt to construct a correct system of agricultural prices must take as *a starting point the given relations in the national income distribution*. These relations are determined by the totality of the conditions of development of the national economy and cannot be altered arbitrarily. This is why I cannot agree with the viewpoint of some economists who want to take as the point of departure not an analysis of the general developmental conditions of the national economy and the proportions dictated by them, but an abstract supposition, which—in their opinion—*should* shape the 'proper' price formation of agricultural produce.

Besides the distribution of the national income it is necessary to consider the following factors:

(*a*) An economically substantiated *consumers' goods retail price system*—this is determined by the structures of the people's income and demand for consumption goods. The relation between prices paid by farmers and retail prices of finished goods are loose in relation to some articles and very tight in the case of others. The median has a given margin of elasticity. The problem of a correct price policy is the corresponding regulation of the size of this margin in order to make the price movement for producers to a certain extent independent—if such is required—of the consumers' price movement. This is also necessary to prevent the development of a primitive form of commodity exchange between town and country (the clandestine sale of meat, etc.).

(*b*) Suitable relations between the prices of individual agricultural products determined by the conditions of their production and realisation.

(*c*) The long-range tasks in the sphere of the expansion of agricultural production.

Most complicated is the problem relating to the stabilisation of agricultural prices.

The postulate regarding the stabilisation of agricultural prices is in contradiction with that of stablising the incomes of the farm population (resulting from the relatively high harvest fluctuation). Since both above postulates are of great social and economic importance, which one of them should be sacrificed to the other? It seems that the only rational solution is that of a compromise.

The desire to stabilise agricultural prices must not be expressed in rigid price fixing regardless of the size of the crop. In setting

prices the state must to a certain extent reckon with the harvest.

I am therefore not advocating rigid agricultural prices but only an appreciable mitigation of price fluctuation[22] and a conscious *choice* of price changes (which would have taken place under conditions of the free play of market forces). Price changes unconnected with the long-range trend of production costs and changes in the demand structure ought to be eliminated as much as possible.

When the rise in demand for agricultural produce exceeds the supply it is necessary to counteract the tendency to an increase in prices. Price regulation, however inadequate for this task, may by its realisation play an important role.

A sharp price rise does not have to lead at all to a rapid increase of agricultural production. Investigation of the supply elasticity of agricultural products indicates that a moderate price increase is much more effective than a large rise in prices. According to M. Ezekiel, a price rise exceeding 10 per cent hardly causes any reaction among grain farmers (this of course pertains to short periods).[23] Price is one of the instruments for influencing the expansion of agricultural production, but it is by no means the only or most important one.

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The agricultural price level has an important effect on the degree of intensification of agriculture. It is, however, necessary to reject the thesis that the intensification of agriculture can only take place under conditions of constantly rising agricultural prices, since:

(*a*) Increasing the total rural income and improving the provision of investment goods is inadequate for appreciably increasing the tempo of development of agriculture. The assumption that the peasants will themselves regulate the range of direction of investment in a satisfactory manner must be considered deceptive. What is necessary is a suitable policy of strong 'injections', influencing agricultural production by the combined stimuli of peasant and state investments;

(*b*) To proceed further, it would be necessary to follow a course of stimulating production not by means of incessantly increasing

[22] When the state does not dispose of reserves or has limited import possibilities, and when prices are formed under the influence of the free play of supply and demand, changes in the supply of agricultural products are often brought about which are greater than the proportional changes in the price magnitude.

[23] Mordechai Ezekiel, *Methods of Correlation Analysis*, (New York, 1953), 2nd ed. p. 429

prices but by gradually reducing production costs (by increasing the production of artificial fertilisers and making them cheaper, among other things);

(*c*) Productive aid to producers' cooperatives and weaker peasant economies has to be continued and expanded.

Strictly speaking, these problems go beyond the framework of price policy. But they must not be ignored. A solution of the problem of the general agricultural price level which ignores the question of rural obligations to the state and state aid to agriculture (and hence the utilisation of surplus products) is sterile. The problem of productive investments is of particular importance. Its range and effectiveness bear a decisive significance for the development of agriculture (as with all other branches of production). One must of course possess the corresponding material means in order to invest. I would therefore like to consider in what manner a given part of the national income may be assured for agricultural investment.

Some economists believe that this problem can only be solved by means of assuring farmers adequately high prices. It is difficult to agree with this viewpoint for the following reasons:

(*a*) High prices may profit the principal capitalist economies but they would be in contradiction to our *class* policy of rural prices;

(*b*) There is little doubt that even if capitalist economies had investment opportunities under our conditions (i.e., in countries building socialism) they would make considerable investments;

(*c*) For small and medium farming it is difficult to assure in advance that a given part of the rise in income will be allocated for productive investment;

(*d*) A great dispersion of means will not allow undertaking some large investments which are indispensable for the development of agriculture.

The viewpoint at the opposite extreme, namely, that the state should concentrate the total values of surplus agricultural products and undertake investments in a centralised manner is likewise incorrect. This view is refuted by the following considerations:

(*a*) Political considerations (such a policy would be very unpopular among the peasants);

(*b*) State investments will confront insurmountable difficulties flowing from the present social economic structure of our agriculture;

(*c*) Excessive investment centralisation will react unfavourably on its effectiveness (particularly in agriculture).

Hence the only way out is to influence production by encouraging the peasants themselves to invest and to engage the material means accumulated by the state. Realisation of this policy is promoted by cheap credit, tax relief for farms undertaking productive investments, creation of farm machinery centres, aid in rural electrification, in melioration projects, etc.

The state invests in agriculture by expanding and perfecting the production of the means of agricultural production. Under certain conditions it may be advantageous to subsidise the production of artificial fertilisers.

Progress in production technique and technology depends upon the activities of state institutions. Only the state can create the necessary experimental centres; only the state can push forward the development of the branches of science related to agriculture. This, however, does not exhaust the problem. It is still necessary to assure peasant economies access to technical progress. The policy of lower prices on means of production destined for agriculture does not itself guarantee a proper direction of agricultural development. It would mean to favour the large farms and maintain the backwardness of the small and underdeveloped ones.

This is why the problem of aiding every form of cooperative economic activity on the part of the toiling peasantry, of combining their production, requires the most comprehensive treatment. Technical progress must march hand in hand with the general economic and social progress, with the advances on the road to the socialist reconstruction of agriculture.

The Concept of Expedient Prices

Price policy has to play an active role indicating the directions of development of agricultural production and stimulating that development. This task can best be fulfilled by a policy of expedient prices. The term 'expedient prices' indicates that prices are set from the viewpoint of the general targets formulated in national economic plans. Such prices are binding over a period sufficiently adequate to serve as a basis for an economic accounting and enable the deliberate influencing of the direction of development of

agricultural production. It is necessary to take into consideration the conditions for long-range equilibrium in establishing expedient prices, and to disregard the effects of accidental market fluctuations. Concrete prices obligatory for a given year could be set, resting on expedient prices and the coefficient corresponding to the harvest size. It would be necessary also to consider the industrial price index.

The prices of grain, hogs and milk are trend-determining. These prices must be considered as trend-determining since their absolute level and inter-proportionality have a decisive effect upon the direction of development of total agricultural production in our country. The price proportions among all other agricultural products have a secondary importance.

The price proportions among agricultural products cannot be constant. They change as a result of variations in technological relations in labour productivity, in prices of production factors as well as in supply and demand. The reaction of farmers to changes in proportions depends on the character of their economies and the type of products involved (this concerns the replacement of complementary or also supplementary production branches in favour of others). These reactions are not always rational though. Certain reactions, which have to do with the farmers' subjective feelings, with their convictions that a given branch of production is or is not profitable, are important even though they may no longer be substantiated. It is also known that farmers make production decisions under the influence of the preceding year's prices, not on the basis of anticipated future prices. This not only results from the impossibility of an accurate forecast of future harvests and prices, but also from the fact that investment possibilities are decided by the size of the financial means derived from the given year's sales.

This looking backward in calculating production profitability is a factor which makes difficult the adjustment of agricultural production to the social consumption demand structure.

Fixing agricultural prices in advance, properly directing credits and disseminating the experiences of advanced farms—which are the first to initiate new production proportions and new profitability conditions—ought to counteract the irrational reactions of petty producers.

Changes in price relations which result from the adjustment of

agricultural production to the structure of social demand, should be accentuated; whereas changes which do not bring about this condition and are only factors of uncertainty in economic management, should be minimised. Practice indicates that it is well possible to distinguish these two types of changes.[24]

Uncertainty brings about not only unexpected price changes. The anticipation of price changes plays a positive role, stimulating agriculture to transpose production in the desired direction. But not under all conditions are farmers (or at least an appreciable group of them) in a position to adapt themselves to a changing price system. They therefore cannot consider the production targets involved when making decisions relative to changes in price relations. As is the case with economic policy in general, a class viewpoint is obligatory for decision-making in this sphere.

The acquisition of more complete data regarding the influence of price policy on agricultural production requires the systematic investigation of the formation of production costs and of the supply elasticity in our agriculture.

The essence of the concept advanced here (which is of course a matter for discussion) is the necessity of concentrating attention on the *whole* system of agricultural prices, and not on individual acts of intervention with the aim of regulating the price of one or another product.

It must be stressed that the problem of proper price relations bears a particularly great importance in conditions when the state determines the price structure.

The price system is more or less cohesive when price formation takes place on a freely competitive market (this does not mean that the price system will always correspond to the requirements of economic development). Influencing by the state of *individual* prices involves the real danger of distorting the internal logic of the price system. The lack of connection between decisions relating to prices of individual agricultural products threatens the emergence of serious contradictions and disproportions which will result in weakening the efficacy of every attempt to influence agricultural production and the market. To this must be added that elimination of the above mentioned contradictions and disproportions in no

[24] See T. Schultz, *Agriculture in an Unstable Economy*, p. 265.

way indicates the equilibration of production conditions (profitability) for all branches of the agricultural economy.

A price system which automatically adjusts itself to the level of costs cannot influence the direction of development of agricultural production. Hence the elimination of internal contradictions in the system of price regulation only signifies that intervention in *individual* cases does not conflict with the *general* programme of directing the development of agricultural production.[25]

[25] The concept of expedient prices referred to above in no way corresponds to the so-called French *prix d'objectives*, although it considers the experiences of that system. *Prix d'objectives* are the prices, which in the assumption of the French government, will be obligatory in the selected year 1961, and which should be gradually approached by the present agricultural prices. Fixing the price system several years in advance has the aim of orienting the farmers toward the desired direction of development of agricultural production. My suggestions do not aim in any way to proclaim prices for 1965, for example. I do not think that this kind of rigid price policy is necessary or advantageous under our conditions. I consider it, however, expedient to take some serious steps forward in the direction of influencing the whole price system (on the basis of a scientific analysis of the conditions of production and realisation of agricultural produce) and establishing a stronger connection between individual measures in the sphere of prices with the long range programme of agricultural development.

It is also necessary to remember that in the general conditions for directing production, the market and prices of agricultural products are basically different with us than in France. Hence, certain theoretical conceptions which have not much chance of succedding in France, have an entirely different significance for us. (See M. Pohorille, '*Regulowanie cen rolnych w niektorych krajech kapitalistycznych*', Warszawa, 1958 (The Regulation of Agricultural Prices in Selected Capitalist Countries).

II

WAGES IN SOCIALIST ECONOMY

Zofia Morecka

I THE GENERAL CHARACTERISTICS OF WAGES*

THE CATEGORY WAGES IS ONE OF THE FORMS of personal consumption income. The most general premise of their appearance is therefore the individual character of consumption; the exclusiveness of household economy creates the necessity for utilising corresponding means for their direction. The commodity nature of consumption goods furthermore determines the money character of all income, hence also of wages. A particular condition for the origin of wages as a specific form of personal consumption income is the differentiation between the ownership of labour power and property in means of production. This has constituted during the entire development of human society up to now the basis for the specific forms of bringing together living and materialised labour in the forms of hired labour, as well as of wages, which is inseparable from it. The differing character of property in the means of production determined the content of hired labour and the laws governing wage levels.

The principal elements which determine the content of hired labour, the conditions of labour as well as the laws of labour remuneration in capitalist economy are: the private capitalist ownership of the means of production and the existence of free labour deprived of means of production. In socialist economy, of course, wages appear on a different qualitative basis.

By abolishing the private ownership of the means of production, the socialist revolution turns them—and the goods produced—

*The definition of wages applies in practice to income from both productive and unproductive labour. Scientific accuracy requires the separate treatment of each of these types of income, as actually differentiated from the viewpoint of economic content, as well as of the basis for the formation of their magnitudes. This article is limited to wages accruing from productive labour.

into social property. Since living labour, however, appears in a potential form—the form of labour power—it retains its individual, non-socialised character. The worker has the independent right to decide about going to work in general, as well as to choose his trade and place of work. Compulsory labour is foreign to socialist economy, even though all members of socialist society have a moral obligation to work; and for one's own labour to become the generally basic means of income is synonymous with the economic compulsion to labour.

The inclusion of living labour in the social production process requires the prior 'de-individualisation' (alienation) of labour power, placing it at the disposal of society. This occurs in the *forms of hiring* labour power; the sphere of obligations, the hours of labour, its conditions and remuneration being fixed from above. And the utilisation of the labour power takes place only after conclusion of a labour agreement, after determination of the conditions of the exchange of potential labour for wages. The labour process itself takes place under someone's direction in enterprises which are not the direct property of the producers, who do not incur risks of their own. From a formal viewpoint, as Lenin said, everybody here is a state employee.[1]

Labour relations connected with two antagonistic classes under capitalism, are replaced by relations between individual citizens and the state. The character of state ownership of the main means of production plays a decisive role in shaping the content of these new labour relations.

The *social* ownership of the main means of production does not mean that they are the individual or collective property of any economic subject except the *totality* of the workers, of whom that society is composed. Each of them connected with the production process, in the form of his labour, is part of the collective ownership of the means of production in the same way as of all

[1] This form, conditioned by the differentiation between the individual ownership of labour power and the collective ownership of the means of production, cannot be regarded as a negative phenomenon in socialist economy. On the contrary, it plays an important role in the organisation and control of the distribution of individual workers in the production process, particularly in view of the tremendous range of state property. In collective property of a lower range of socialisation—cooperative property—labour does not acquire the forms of being hired, nor does income assume the forms of wages.

other means constituting state property. This has an essential significance for the role of the workers in production and in the distribution of the products produced by them.

The contradictions between individual production factors disappear as a result of the merging of the social ownership of the means of production and ownership of labour power in the same class—although the first is collective and the second is individual. Instead of subordinating labour, capital is subordinated to the real productive elements in the interests of the direct producers—the owners of labour power and co-owners of the means of production. The alienation of labour, the limited role of the working class in managing production disappear in measure with the maturing of socialist production relations, in the extent of the growth of their social activisation. Labour power remains a commodity, while production and distribution are similar in certain respects to working in their own large enterprises. The workers fulfil the function—directly or indirectly through their representatives—of co-organisers of production, of issuing orders and controlling social production, of participators in decisions pertaining to production and distribution—materially connected with the positive and negative results of their own work and that of their co-citizens. Under such conditions, the category, value of labour power, disappears. The necessary costs of reproducing the labour power is henceforth the objective lower limit of the given wage fund; it is not alienated; however, it does not assume the form of value—the subject of an exchange between workers and 'work-givers'. Wage dynamics signify primarily changes in the magnitude of the national income, and not the conditions for reproduction of labour power. Wages, which appear on the surface as the money equivalent—and hence, as the price—of labour, are not henceforth the values of labour power, but the values of newly produced goods. The planned establishment, on the basis of an analysis, of the requirements of a law of reproduction of labour power and gross production coefficient of the labour equivalence $\frac{I}{I+\frac{m}{v}}$ defines the share of wages in the national income. This constitutes the basic forms of the total and individual levels.

The maintenance of hired labour, which is inseparable from the wage system, is hence accompanied under socialism by the transformation of one and the other. The basis of this transformation is the socialisation of the main means of production. The more formal, however, is the character of the transformation, the more limited is the role of the broad mass of workers in fulfilling executive roles, the more rigid and more independent of the total results of production is their remuneration. Furthermore, in this condition, the more alienated living labour remains from the means of production, the greater are the elements of the old content of hired labour, and the more does remuneration retain the characteristics of price of labour power.

Wages in a socialist system are not the prices of labour power, although the latter continues to be a commodity; the double character of wages and their role as 'prices of labour' is, however, maintained in the national economy.

The double character of wages consists in the fact that they are simultaneously concrete forms of *personal income* and elements in *production costs*.

The income function of wages is a matter of concern to society as a whole. The wage-earning class faces no opposing forces in whose interests it would be to limit the wage magnitude.[2] The continuous improvement of working conditions and level of well-being is not solely the object of the working people: the fundamental goal of social production, which finds full consideration in the activity of economic administration, is an integral part of it. This fact has an important bearing on the attitude towards wages. For, it means that all managing elements in the economy (workers, enterprises, central planning agencies) regard wages as a factor shaping consumption, and undertake decisions favourable to its growth.

Thus, the character of wages acquires a general social significance.[3] How best to economise on production factors, how to

[2] There may arise in a socialist economy certain elements of conflicting interests in the sphere of distribution of the consumption fund between the working class, the peasantry and other members of society.

[3] The Yugoslav attempt to give up the treatment of wages as a cost element, and to shift them entirely to income accounting, requires a detailed analysis. Connecting the wage movement with the dynamics of newly produced values not only on a general national scale, but

exploit them most rationally in order to cut production costs are matters of interest to society as a whole. And as we shall show later, wages play an important role in this process.

The stability of the labour-wage exchange coefficient in the short range and its differentiation—on the basis of the kind of work and the guage of the employment balance—as well as the two-sided character of wages, result to a certain extent in wages fulfilling the role of prices of labour[4] also in a socialist society. And this applies to the worker as well as to the enterprise. Appearing in these forms, wages represent for individual administrative elements not only a subject of their resources but also as a parameter of activity in the sphere of administering the labour force. For enterprises they may constitute a basis for choosing the production method and to establish the dimensions of employment; and with workers they exert an influence on their understanding of the quantity and quality of the labour supply.

The planned character of wages in socialist economy enables shaping the wage magnitude by considering its role as a factor determining the level of well-being, and as an instrument for steering production—particularly the development, differentiation and utilisation of the labour force. For a true wage system and an effective wage policy it is therefore indispensable to properly establish their effects on the workers advancement—in conditions of the free choice of occupation and place of work—and on the progress of ascertaining the enterprises with a measure of autonomy.

II WAGES AS AN INCENTIVE FOR WORKERS

The workers are the basic factor of economic activity under socialism. Their new situation, the lack of their class alienation from the means of production favour the emergence of a type of worker-managers, who the more actively they participate in acquiring the functions of co-owners and co-directors, the more advanced is democracy in production and in the general political life of the given society. However, the maintenance of individual

in individual enterprises undoubtedly creates a new brand of wages, which however, maintains its previous function, as a measure of labour.

[4] It fulfills this role for each enterprise as well as for hired labour in capitalist economy, although in essence, wages here represent the prices of labour power.

property in consumption goods, and of scattered individual domestic economies alongside the general social ownership of the main means of production, as well as the fact that labour remains as the chief norm of personal well-being, tends to fossilise among the members of socialist society an attitude towards the worker as a consumer, even raising the consumer conception to the first rank. It is certain that ideological and intellectural motives of operation play a large role among the so-called social vanguard. The attitude of social activist or labour enthusiast has a strong tendency to spread, particularly in certain industrialised spheres of social development. But this cannot, however, constitute a point of departure for shaping economic policy unless it becomes a mass attitude; although it requires solicitous care and development as a future attitude.

The consumption attitude expresses itself as a desire for assurance of the best possible conditions of labour and of well-being.[5]

Conditions of well-being are formed under the influence of three basic factors: the state of the workers' personal (non-productive) property, the magnitude of the so-called social consumption (realised on the basis of social non-productive wealth and current national income) as well as the current workers' personal income.

The stock of constant capital has a stabilising effect on the conditions of well-being, while current income lends them a much different character.

Until now we have regarded the mass of workers and their families as a unit and the social and personal consumption fund as homogeneous—both constituted portions of newly produced values; both were destined for the satisfaction of the workers' needs. Thus there has appeared even in world literature a definition of 'wages in the broad sense' which embraces all elements forming the workers' standards of living, and originating from current national income.[6]

Such a broad wage concept comprises an almost complete

[5] Elaboration of the theme requires limiting its consideration to condition of well-being which in themselves constitute an actual factor in the workers' standard of living and which exert a very important influence on their attitude to labour.

[6] '*Les Caracteres Contemporaine du Salaire*', Presses Universitaires de France, 1946.

complex of instruments used by the state to influence the citizens' living standards. This influence takes two basic directions: through the enterprises in connection with working conditions, and outside the enterprises—through social security, cultural, educational institutions, etc. The consumption fund realised outside the conditions of labour is distributed in accordance with the need criterion, and therefore plays no direct role except as consumption; it almost exclusively constitutes an instrument for *distribution* of well-being, although it reacts indirectly both on *production* and on the character of labour power and attitude to work. The second part of the consumption fund comes from the enterprises. The second part—the so-called workers' service disbursements—come properly from the social consumption fund although they are paid on the enterprise account. They are distributed according to need (often modified in some countries by the coefficient of well-being as, for example, by family allowances or sick benefits) and although their payment is conditioned by the occupational activity of the worker, they directly constitute the principal instrument for distribution of well-being.[7] The second part of the consumption fund, coming from the enterprises, is payment in its narrow meaning, which corresponds to given categories of labour and trades and thus to the amount of labour performed and its results.

For the objective situation of the worker and his general state of mind payment in the broad sense is of utmost importance. In an economic sense, it is the magnitude determining quantitative and qualitative reproduction of labour power. However, from the viewpoint of the current management of labour power, wages in the narrow sense comes to the front; hence the direct part of a worker's income is related to the character of the work done by him and not to the fact of his professional activisation. For, experience shows that every disbursement—although paid by enterprises—is most often regarded as accruing from citizenship and not labour, and the fact of its distribution according to need and oftentimes in the nature of services, weakens their attractiveness still more in comparison with paid money income.

On the background of other factors determining living standards,

[7] The partial differentiation of disbursements on the basis of production branches, regions or groups of workers, add to their value as instruments for managing the labour force.

wages—in the narrow sense—which play a decisive role among them, are for the worker the principal measure of his role in society, and determines his attitude to labour, which flows from the above. As we saw, despite the socialisation of the main means of production, labour power remains individual and free under socialism. These traits are of course limited by the planned character of the national economy as a whole, and hence also of the disposition of labour power. Planning imposes a greater stability on individual decisions and creates organisational limits to immediate and long range decisions (compare, for example, its effect on vocational training). However, the lack of forced labour means that the worker makes his own decisions or else agrees with some consideration proposed to him.

Decisions which a person in a socialist society who is able to work, must make relate to the following: 1) occupational activity, hence whether or not to involve his labour power in the production process; 2) the direction, character and place of work—branches of production, trades, enterprises; 3) dynamics of his labour, i.e., changes in its quality and intensity in the period of occupational activity.

The first decision pertains to occupation. It may be said that every normal and healthy person feels the need of using his life energy upon reaching a certain age, but that does not necessarily have to take the form of gainful employment in some occupation. A good part of women, for example, maintain themselves very well with housework, intellectuals shun organised obligations, etc. Omitting some particularly desirable occupation or the social impulse, it is necessary to state that an appreciable majority of the members of society go to work in general (in any kind of employment) under the pressure of economic compulsion. It acts similarly as it did among the proletariat in the capitalist era, although in a weaker manner due to social construction, while it is most universal at the same time. For, consistent with the economic concepts of socialism, labour is the only title to a share in the consumption fund. 'He who does not work shall not eat' is one of the cardinal principles of socialism. Because of the survival under socialist conditions of private consumption, organised on a family basis, economic compulsion acts with particular force on the so-called, chief family bread winner. In practice, he does not

face the choice of 'working or not working'; he must work to maintain himself and his family.

From the viewpoint of managing the labour force, the number of labourers offered by heads of families is inelastic in relation to the wage magnitude, while their labour inputs are characterised by a high degree of elasticity. Similar is the situation with maturing youth, the potential heads of families, with the qualification, however, that the family situation may in an important manner influence the time of seeking employment.

The most elastic element on the labour market is represented by the remaining members of family consumers' economies who are able to work but do not play the customary role of main heads of families. This pertains primarily to women who have no disposition for a steady occupation as well as to persons who are not fully able to work—aged, sick, etc. Their occupational employment is, to a decisive degree determined by the income of the main head of the family. Absolute economic compulsion acts also on the remaining members of the family up to the time they acquire earnings that satisfy minimum subsistence needs.[8] Above, this level begins only with the consideration of the alternative—additional income and occupational employment, or resignation from both. Many such remaining examples are observable in our practice. The tremendous rise in the proportion of women, particularly of married women burdened with children in occupational employment—in the first stage of industrialisation—resulted not only, and not even primarily, from the growing power of their emancipation, but was in great measure brought about by the general decline in real earnings. In a survey conducted by a women's magazine many working mothers expressed a desire to stop work or to go on half-time if there were an increase in their husbands' earnings or in social services.

Of course, the results of members of the family undertaking gainful employment is not meant to prvide for the necessity of ensuring the minimum maintenance requirements. Like its members, the family desires the maximum not just the minimum satisfaction of its needs Therefore, the possibilities of attaining a higher level of well-being, to enter on a higher plane of affluence owing to additional earnings are not a small attraction. Alongside

[8] This means the level considered by the family as indispensable.

an increased supply of labour with a relatively low family income we therefore observe a growth also of the supply under the influence of higher wages with a relatively high level of living. The worker does not only himself decide his attitude to gainful employment, but in normal conditions of the socialist economy—to which unemployment is basically alien—makes a conscious choice of his occupation and place of work before accepting them. He also decides himself whether to remain on the job or to change it—during the period of his occupational activity. If the thesis of the dominant worker-consumer attitude of members of socialist society is correct, then it plays an exceptionally important role for the considered premise. Desiring to obtain the best conditions of work and well-being possible at the given moment and to gradually improve them, the worker attains a choice between different variants of occupation, position and place of work. He is guided in this by diverse considerations relative to the work and the place of employment. The character of the work, its intensity and conditions of accomplishment, the costs of vocational preparation, the level of payment and the social estimation of the work—all these are one group of factors that influence the worker's attitude to the given work. The general conditions of well-being, housing conditions, living costs, cultural conditions and even climate (local patriotism) and family links—constitute the second (incidental) group of factors, flowing primarily from the location of the labour force. Both factors determine the distribution of the total national labour market in regional labour markets, the flow between which is quite difficult. This means the appearance of wages in the background of numerous subjective and objective, individual and social, economic and non-economic factors, which modify its role as an incentive in the choice of trade and place of work.

Some of these factors act in the same direction as wages, as if to strengthen the force of its operation; others, however, clearly act in a counter direction. The proportionate development of the planned social economy encourages the equalisation of the conditions of labour and well-being, and neutralises in this manner some non-wage incentives for the labour force distribution, which result from clear differences between branches and regions. Here may be mentioned universal schooling and vocational preparation

at state expense, the strengthening of safety measures at work places, the universal modernisation of production and the expansion of cultural activity, reducing the disparity in levels of civilisation and culture between the towns and rural areas and between the large and small industrial centres, etc. All these tendencies undoubtedly strengthen the role of wages in the choice of occupation and place of employment, encouraging the worker's acceptance of ever more difficult tasks under conditions of greater responsibility. However, these tendencies develop gradually and in sharp disproportions. Hence, too, wage policy in a socialist economy, which stresses the distribution of the labour force, must—along with the character of labour as a subject of exchange between the worker and society—also deeply consider the effectiveness of wages.

Certain signs of the disintegration of the labour market and the diverse considerations with regard to the choice of labour, furnish us with Polish evidence—to the extent that it may be competent—that we are not characterised by a consistent long-range wage policy. The surplus of local labour power, overwhelmingly of women, who for different reasons—mainly of a family nature—cannot move to other locations, is well known. The flight of young intellectuals from work in the so-called provinces is a fairly general phenomenon which it was necessary to counteract by resorting to administrative orders—i.e., by the general limitation of residence registrations in large cities. Undoubtedly cultural conditions and general well-being as well as the prospects of personal development played a role here; for current wages do not differ much. The inadequate flow of labour power to certain production branches—for example, to mining—despite very high earnings in comparison with other branches, is symptomatic. Involved here certainly are the conditions of work underground and its related dangers. The unequal labour supply in spheres in which earning levels are close, such as in administration —for which there is no lack of willing applicants—and in state agricultural economy, which continuously suffer from a lack of labour, indicate the general role of the conditions of civilisation and culture as well as of the social evaluation of different types of work remaining from the previous social system. We see on the other hand, a flight of promising youth with technological, legal

or economic schooling from work on higher education. This is due to the influence of considerable differences in current earnings and to the expectations of a more rapid advance and rise in future earnings.[9]

Disintegration of the labour market strengthens the role of the extension of the qualitative reproduction of labour power in production branches, and hence the growth of personnel and their development in terms of qualification levels. Here many factors exert an influence on the worker's decision, but the number of factors is appreciably reduced in comparison to the choice of vocations and places of work. For, a number of elements, such as regional living conditions, emotional links, general conditions of labour, remain basically the same. There is mainly a change in the character of labour and partly in the conditions of its accomplishment, in the range of responsibilities and obligations as well as in remuneration. What follows is a smaller number of factors, and these are almost exclusively related to labour. Here wages assume their full weight as direct equivalents of labour, and their functions constitute the main basis of the choice achieved by the worker and the chief incentive for the rise of his qualifications and advancement.

Labour is more homogeneous in an enterprise (or a branch) than on the scale of the national economy as a whole, and is therefore more easily comparable. The daily contacts in an enterprise provide the worker with good information regarding his own work as well as with wage rates on different positions. This enables him to make a very conscious choice. From this results the greater importance of proper wage proportions within the plant, based on an all-sided analysis of the labour process. A very detailed consideration of this problem leads to the application of the particular role of wage proportions along certain vocational lines which appear in each plant. For the limitation of shifting labour expresses itself—among other things—in the lack of the workers' full freedom to transfer from one position to another within the

[9] An interesting analysis by an American scientist for 1940–50, led him to the conclusion that wages show a decided lack of influence on the supply of labour power, and particularly on its fluidity in capitalist economy (C.A. Meyers, 'Labour Market Theory and Empirical Research', in the collection, *The Theory of Wage Determination*, ed. J. Dunlop, London, New York, 1957).

framework of the plant or branch of production. In general, the possibilities for advancement are arranged, so to speak, in the form of a 'ladder' adjusted on the basis of the original trade. The wage structure, or rather the wage proportions on this 'ladder' are of decisive importance for the effectiveness of wages as an incentive for improved qualifications and shifting from one position to another.

The rise of qualifications must not lead to a change in position. Its direct and vastly important meaning for the national economy lies in the increase of labour productivity and of other production indices. In this case an important influence is exerted by wage differentiation consistent with the results obtained, and hence by the increased earnings of the given worker in measure with the rise in productivity or in the quality of production. The whole range of wage systems, based on the relation between individual labour results and individual earnings, serve to realise this task. Their effectiveness, however, and thus the efficacy of their application depend on the actual influence of the given worker on the results of his labour. Factors limiting this influence are primarily technical or the organisation of the labour process in the enterprises.

The wage differentiation for workers of the same category, or even of the same worker at different times, on the basis of the labour inputs and their results, undoubtedly stimulates an improvement in the utilisation of labour power. Only differentiation on a somewhat too high scale—hence rapidly rising and easily falling earnings—create counter-incentive dangers, related to the lack of stabilised family budgets. For, earnings gained over an extended period in the form of magnitudes close to each other, make possible a more orderly, more highly balanced life, and family planning for the future in order to achieve in this manner gradually higher living standards (by the planned acquisition of durable goods, for example). Practice shows, however, that fairly high but irregular incomes are spent much more incidentally, thus wasting in part the possibilities for the better satisfaction of needs as related to the size of the given income.

The influence of wages upon the worker as an incentive (in the sense mentioned above) is the stronger to the extent in which the labour power has an individual, separate character, and the worker a strong private property relation to his earnings. As explained above, this relation is objectively conditioned by the individual

character of production under socialism and by the dependence of its level mainly on individual income. Despite the fact that this kind of consumption is inseparable from socialism, the worker's attitude is transformed under the influence of the deepening socialisation of production. The accompanying process of democratisation of production and the growth of the worker's functions as co-manager, co-owner and co-director creates new labour incentives. A great expansion of his professional horizons, a more realistic appreciation of the role of personal labour, an understanding of his interdependence and community of interests with the rest of the collective, a feeling of authority and of acting on broad premises —these are some of the factors which stimulate the release of the worker's new energies regardless of the remuneration magnitude. If these elements of a new attitude are aided by additional material self interest of the worker's in the results of the enterprise's performance, then there are great chances that they will endure and deepen. The form of this link (a sliding wage fund, profit sharing, housing construction, improvement of working conditions, etc.) has here the significance of a secondary economic plan and should be adopted to the specific conditions of a given plant (or branch) and corresponding to its requirements. That of course also depends on the concrete conditions of the general period in which it is applied.

III WAGES AS AN INCENTIVE FOR ENTERPRISES

The principal task of socialist enterprises is the maximisation of the social product with a given social input of living and materialised labour. To realise this task decisions must be made primarily relative to the range and variety of production as well as its method —thus to the structure of employing the diverse production factors and organisation of the labour process. The basis of arriving at production decisions is (or ought to be) an analysis of the conditions and results of the application of the different solution variants. Wages is one of the magnitudes appearing in such analyses. It appears as a 'price' production factor—living labour—in the accounting of enterprise costs it appears also as a form of income in evaluating production results. We spoke above about the fact that from the consumption-income character of wages follows the task of continuously raising the earning level for all sections of the national

economy, hence also for the enterprises. Its realisation is therefore one of the yardsticks for evaluating the work of enterprises. But this realisation is accomplished through the prism of the enterprise's basic tasks, i.e., maximisation of production with the given inputs, or minimising inputs in achieving the given results. This is wh an analysis of the wage dynamics on the basis of changes in the range and quality of production and unit costs is indispensable.

As an analogy of wages in the 'broad' sense, it is possible to speak of the broadly conceived costs of applying living labour in the enterprises which are composed of the so-called disbursements on direct and indirect labour. From the viewpoint of the actual shaping of the levels of unit costs, the totality of labour costs enter into the account in a uniform manner. However, from the viewpoint of influencing the dynamics of unit costs, it is necessary to consider variable costs separately and in relation to the constant elements of these costs. Variable earnings (piece work, premiums) appear as variable labour costs. Relatively constant costs include the fixed endowments and disbursements for their own workers. Both costs are connected with the employment range; while the first is related to the structure of the workers' qualifications, and the second to their needs which are satisfied by the disbursements concerned. Disbursements made by the State treasury (social insurance, for example) belong to a separate group. These rise by a given coefficient both constant and variable labour costs in proportion to the gross wage fund.

Under the conditions of a planned economy all elements of labour costs are characterised by stability over a given period of time. This pertains to individual wages (rate for individual classifications, piece rates, premiums) and to the basis and magnitude of disbursements. This enables the enterprises to erect their production plans and to employ the production factors on the basis of the mentioned magnitudes.

The task of minimising social inputs means in practice an obligation for the enterprises to continuously lower their own unit costs.[10] Besides wages and disbursements, a whole series of other

[10] This is not an identical task, social inputs embrace the sums of expended living labour and utilised materialised labour; while costs are only the money equivalents paid for their consumption. However, a more direct and complete manner of measuring inputs is not known.

items are included in these costs the share of each of these depends in large measure upon the specific characteristics of the given branches of production, mainly, however, on their technology. The lowering of own costs is a complex problem, for it involves primarily and directly the diminution of total unit costs; and in short periods, the lowering of unit variable costs. In individual cases it involves also the diminution of given types of costs (for example, on labour or raw materials per unit, and thus on their sums).

The role of wages in this sphere assumes two aspects—direct and indirect. The first role applies to wages as simply one of many types of costs, the reduction of which must be pressed all the harder the greater is its weight in the cost structure of enterprises or products. Abstractly considered, this reduction may be attained either by diminishing the labour input per product unit, or by reducing wages per unit. It seems to me that the realities of socialist conditions permit the application of the second method, provided it is connected with a simultaneous increase in the purchasing power of money, which will at least guarantee that units of labour will maintain their real level. Experience teaches us, however, that changes in the levels of nominal wages evoke much stronger emotional reactions than changes in the movement of real wages. This is why the desire to lower labour costs by reducing rates has to be excluded on principle in the management of socialist economy. Savings of living labour is therefore the most suitable method of direct reduction of labour costs.

Thrift in living labour per product unit means a rise in productivity. It may be attained by maintaining basically unchanged production methods—the so-called structure of employing different production factors—or by changing these methods, which is ordinarily achieved over the long range. Besides, the wage magnitude may be one of the premises for the enterprise's choice of the production method. It appears in this case as an alternative to the costs of applying other factors in a sphere in which they may be reciprocally substituted. 'Fragmentary' unit costs, i.e., the costs applied to a given category of labour, or given equipment for the production of units (or parts) of a given product, are subject to comparison. Wages as the 'price' of labour is accompanied here by the prices of equipment of a given productive power in in-

fluencing the proper choice of production methods. The choice is, however, subject to many limitations.

First of all, the possibility of shifting living labour and equipment is limited from a technical viewpoint. The productive assets already possessed by the enterprise is a very important factor which modifies the choice of employment of the production factors by burdening them with constant costs regardless of the utilisation level of the production capacity. The great supply of labour power reacts in a similar manner in underdeveloped countries.

Due to the role of wages as the principal source of maintenance of members of socialist society, their magnitude must exceed a certain level and this in turn affects the relative magnitude of labour costs in comparison with the alternative costs of applying materialised labour. The choice of production methods under the influence of social factors takes place under circumstances which are disadvantageous to the task of minimising costs. Such a situation becomes particularly serious in cases where changes in production methods are accompanied by the release of part of the labour force, while the labour market does not 'feel' any lack of available workers. The Polish economy faced such a situation in recent years. Production costs did not act here as factors regulating the volume of employment and encouraging the liquidation of any general overflow in this sphere. Administrative instruments were applied against great opposition in consequence of the attitude of solidarity on the part of working crews. Only the general improvement of the labour market situation moved the problem somewhat out of a blind alley.

A rise in labour productivity is the basis for lowering unit costs over the long as in the short range. But it does not have to be achieved with a simultaneous reduction of labour costs. This follows from—what we called above—the indirect role of wages in cost reduction, related to the use of appreciable living labour in the production process. Labour plays a decisive role among the factors of production, despite the fact that it is only one of them. For, on the worker's efficiency, on his qualifications and the intensity of his labour depends not only his own output, but also the output of all the essential production factors; i.e., not only the volume of living labour inputs per production unit, but also the materialised labour input sustained by them. This conse-

quently indicates the important influence of a highly productive worker on the formation of the essential elements of own costs. In such a case, it even pays enterprises to raise unit labour costs (by a higher rating of the workers or by applying corresponding wage forms) for they compensate by a reduction of other elements of own costs. From the viewpoint of wages as the basis for choice by enterprises, the above indicates their orientation toward a higher level of unit wages as a means for attaining an increase in productivity and a general reduction of costs. Enterprises can obtain similar results by the planned raising of the production quality as a result of an increase in unit wage rates. For, higher quality sometimes raises the consumption level more markedly than does a larger mass of products. From this follows also its importance in realising the task of maximising social production.

We have thus discussed the role of wages as an incentive for the enterprise's choice of production methods as related to the cost-function of wages. Owing to this function, wages also exert a certain influence on decisions pertaining to the range and assortment of production.[11] For both of these depend on the results of the cost analysis and of the quantitative and qualitative production effects obtained from them. Since wages in this case constitute a complementary magnitude in relation to other factor costs, they influence these decisions only indirectly, depending upon the share of labour costs in total (or variable) own costs.

Wages fulfil the role of an incentive for enterprises regardless of what establishes their magnitude and organisational basis. For the objective wage situation creates conditions for economic activity which stimulate the given advance of enterprises. Entrusting enterprises with certain rights in the sphere of wage determination means enabling them to utilise wages as an instrument for managing the labour force. The enterprises appear then at the same time in the role of both objects and subjects of wage policy, and wages fulfil in their activity the role of incentive and instrument for managing the labour force. By utilising wages in its last men-

[11] In spheres where both these decisions rest on an economic accounting, as well as those in which the application of these decisions depend upon the enterprises.

tioned aspect, the enterprises create given wage systems and earning schedules which have the task of stimulating the workers advancement in agreement with the enterprise preferences in this sphere. This pertains mainly to the employment structure (on an enterprise scale), and the rise of qualifications and productivity.

In discussing wages as enterprise incentives it is necessary to remember the much more highly complicated character of these problems under socialist than under capitalist conditions. The social ownership of the basic means of production and the universal status as workers of the members of socialist society, mean the liquidation of class divisions and of social groups of private enterprisers who treat wages exclusively from the viewpoint of production (for private profit). The contradiction between the attitude toward wages as income and their consideration as costs is transformed from expressing itself as a struggle between classes into an internal conflict within each management level. We see this in the earning classification of workers which acknowledges the need of distribution according to labour performed, and which requires wage differentiation in accordance with this criterion; with earnings being, however, estimated primarily from the viewpoint of the demand they have to satisfy. We see this in the higher economic links for which the worker is not only the performer of a given labour task, but as a member of society, the satisfaction of whose needs is the goal of socialist production. We furthermore see this continuously, daily, in the enterprises which have to institute the rational management of the labour force, and to remunerate the workers in agreement with the requirements of economic accounting. But they cannot divorce themselves from the needs of the crews, from which the management is only separated organisationally, not as a different class. This is why a production attitude to wages on the part of enterprises, using them as incentives and instruments of rational management, depends to a great extent on the proper solution of the general distribution problem, considering—among other things—the workers' consumption needs in forms which are constructed and distributed in accordance with the requirements of the social disbursement fund.[12]

[12] See Z. Morecka, 'Economic or Socio-Economic Wages', *Zycie Gospodarcze*, Nos. 8, 91, 1959.

IV BASIC WAGE PROPORTIONS

The character of wages in socialist economy—its cost-income function as well as its role as an incentive and instrument of management lead to a farreaching wage differentiation. The bases of differentiation are heterogeneous, economic and non-economic, general—objective and subjective—and individualised.

The economic bases of wage differentiation lie on three main planes: the reproduction of labour power (i.e., the supply of potential labour), the labour power effectiveness—i.e., the labour achieved by its utilisation—and the condition of the labour market, i.e., the mutual relation between the supply of and demand for labour power. It may be stated from an economic viewpoint that price proportions (wage rates, unit wages, and not earnings) in a socialist economy are formed under the influence of the law of the reproduction of labour power, the law of distribution according to labour, and the law of supply and demand on the labour market. The understanding and conscious use of these laws are the bases for the planned determination of a general social wage structure.

The socially necessary cost of reproducing labour power is a concrete, historically determined magnitude which changes in time and space. Marx wrote in *Capital* in general about the elements composing this cost, while showing also the developmental tendencies of its individual factors. In capitalist conditions this cost takes the form of the value of labour power. The change in the character of production relations and in the content of the category 'wages' under socialism has led to the elimination of this form, without liquidating, however, the problem of the relation between wages and the labour power reproduction costs. This problem is posed in an even sharper manner because of the planned character of wages.

The establishment or enumeration of the magnitudes of the costs of reproduction of labour power, as bases for wage planning, require minute analysis and the collaboration of statisticians, economists, sociologists and even medical men. Depending upon the state of economic development of a given country, these magnitudes are formed on the level approximating the costs of the physiologically indispensable means of subsistence, or appreciably above this level. I am not concerned here with any concrete magnitude,

nor even with the methods of its enumeration, but with the necessity of connecting wage policy with the costs of reproducing labour power, treating these costs as points of departure for every step connected with wages.

Labour power reproduction costs are differentiated not only over great periods of time and large territories, but also within single national economies at the same time. They depend on the degree of labour complexity, intensity and the conditions of its accomplishment. Different expenditures are necessary to acquire different trades and to maintain corresponding qualification levels. Different kinds of labour use up the organism's life force at different tempos. It is therefore possible to state that the necessary investment outlays as well as the indispensable exploitation costs are not uniform for different categories of labour power. The socially necessary reproduction cost of labour power of a given category therefore consists of a certain portion of the total, assuring the reproduction of simple labour power, and of a specific portion the magnitude of which depends on the degree to which the given labour deviates from simple labour. The social function of the general portion is to assure a minimum standard of living for all workers; while the specific portion makes possible the shaping of differentiated productive usefulness consistent with the requirements of the national economy.

Both parts of the costs of reproducing labour power should be covered by wages; the first—by the so-called minimum wage (which constitutes the remuneration level of unqualified workers), the second—by increments over and above the minimum wage. The distinction between the general and specific portions in the costs of reproducing labour power seems suitable for planning the wage movement; for, both depend on other factors, and because of that their changes with time take different courses. The general portion depends most directly on the average level of social labour inputs and revolves to a great extent around the general standard of living. The continuous raising of this level effects an expansion of consumption goods and services acknowledged by a given society at a given stage as necessary for the reproduction of simple labour power. Corresponding to this necessary level is the rise in minimum wages. The 'specific' portion of the reproduction of labour power costs depends on the degree of labour differentiation

and changes together with it. A growth of differences in qualifications and of labour intensity, or of the conditions for their acquisition, stimulates the rise of the specific portion of labour power reproduction costs; and conversely—with the character of labour and the conditions for its utilisation becoming more uniform, that portion becomes smaller. This occurs in a manner corresponding to the wage proportions connected with the costs of reproducing labour power.

If it is assumed that living labour is characterised by uniform effectiveness in all its applications, then it would mean that the labour acquired by applying the labour power would be proportional to the costs of its reproduction, and wage proportions would be shaped in accordance with the scheme covering the proportions resulting from the law of distribution according to labour. However, the greater the divergence between reality and that assumption,[13] the greater will be the degree of divergence of wage proportionality—in satisfying the needs of reproduction—from that scheme, under the influence of the requirements of the law of distribution according to labour.

The law of distribution according to labour is the most general and most immediate basis for wage differentiation in socialist economy. Consistent with the requirements of this law individual earnings should be proportional to the quantity and quality of the labour performed by the individual worker. There are different measures of labour quantity and quality; the natural measure—related to the degree of the worker's exertion, or to the actual results of his labour—or the economic measure—relating to the values produced by his labour. It seems that the law of distribution according to labour requires economic criteria for estimating labour; it is nevertheless often necessary in practice to use natural measures.

This law operates on different levels of economic life—from the individual worker and the enterprise, to the national economy as a whole.[14] Proceeding from the lower to higher levels requires

[13] There undoubtedly exist in the cost of reproducing labour power a series of elements which vary in proportion to the degree of complexity and burdensome character of the labour, such as: the costs of qualifications, of higher consumption and greater relaxation, the greater risks involved. etc. The whole problem, however, requires a separate analysis.

[14] For the purpose of simplification we limit ourselves to productive workers.

ever more general criteria for estimating labour as well as consideration of the interests of society to a greater degree. From the viewpoint of the individual worker, distribution according to labour should also consider his qualifications and degree of exertion. From the enterprise viewpoint—with its diversity among individual workers—the important premise is materialised labour; i.e., the actual, material results of the labour performed. If approached, however, from the viewpoint of the general interests of society, the distribution criterion should be the socially acknowledged labour; in a commodity economy this will be the values of the goods and services produced. For, in highly organised economies, value (like the product which incorporates it) is the result of collective labour in production; the value criterion should be applied in the distribution of the wage fund among the collective producers; hence, among the enterprises.

Independent of the concrete measures of the quantities and qualities of labour, a consistent application of the requirements of the law of distribution according to labour leads to the balance of simple labour unit equivalents for all applied labour of different degrees of complexity and with different inputs. The fixing of equal pay for equal work basically means the equal attractiveness of income for different types of equal labour. If the worker were to be guided by this very criterion of the earning power of labour units, then the questions as to which trade to pursue, the level of qualifications and places of employment would be matters of indifference to him. Actually, workers rely not only on the most advantageous conditions for the exchange of labour for wages, but also—and often primarily—on obtaining the highest possible earnings. This is why a wage schedule corresponding to the requirements of the law of distribution according to labour constitutes a certain incentive for the choice of employment, since it encourages workers to undertake more complicated work under more difficult conditions; it thus stimulates the expansion of the labour supply for the more difficult production sectors.

Besides, various divergencies between scheduled earnings (rates multiplied by average labour inputs) and real earnings—popularly called 'earning possibilities'—constitute a certain criterion of choice. With the share of scheduled earnings being uniform with, or close to, real earnings—which is typical for equalisation of the

level of organisation of the labour process with wages—then, non-economic, and at times even incidental factors, would determine the choice. The thesis may be adopted that such a development on a general social scale leads—on the basis of the law of a large supply—to a proportional distribution of the labour power in the economy.

However, for economies characterised by a rapid tempo of economic and social change, some types of labour will be of particular importance in individual periods. It becomes indispensable to attract additional labour power to such types. Since there is no forced labour in a socialist economy, the mass displacement of labour power, or the acceleration of its expanded reproduction must rely on the strong stimulating role of wages.[15] Consequently, the use of wages as an instrument of economic management requires the planned, conscious divergence of wage proportions (primarily basic rates proportions) from those required by the law of distribution according to labour—a divergence to the advantage of the key branches of employment in a given period. This divergence in relation to individual trades or functions, to production branches and regions, and at times even to individual enterprises, is fixed on the basis of an actual and perspective analysis of the situation on the labour market. The ratio between the supply and demand of labour creates the necessity of applying certain privileged wage rates. The privileged wages are instruments for accelerating the shift of labour power from one sector to another. In this connection it is possible also to effect a levelling redistribution, and thus an accelerated or more massive rise of qualifications and the assumption of more difficult positions as well as a displacement of levels, and thus a flow of workers between enterprises, branches or regions. The problem pertains to the same extent to the distribution of new labour power among various spheres of activity and trades.

The more disproportional is economic development, the greater the transformation of the economic structure—and the more rapid the tempo, the greater may be the contradiction between the actual or perspective structures of supply and demand of labour

[15] It is clear that in a socialist society non-economic incentives—of a moral, political nature, etc.—are more effective than wages. Their analysis, however, goes beyond the framework of the problems elaborated here.

power, and the more pronounced will be the strain in the balance of labour power and the necessity of granting privileges to sectors threatened with an inadequate supply. This situation is periodic in character and should be liquidated at the conclusion of the activity which induced it. This of course does not exclude the possibility of having to grant privileges to some branches, trades or positions over a very long period with the aim of attracting to these spheres the most capable or the most qualified workers.

Wages fixed in the manner mentioned above would be specifically equilibrium wages. Resting on the costs of reproducing labour power and deviating more or less from them—depending on the needs of the national economy in the sphere of the employment structure—wage schedules should aid the assurance of the economy with a flow of the necessary quantities and qualities of labour power as well as with their disposition.

All elements of wage differentiation are characterised by great variations in time—mainly due to changes in the methods and structure of production and differing economic tasks at individual stages of development of the socialist economy. The wage structure and wage proportions are therefore unstable by their very nature, changing the more quickly the more rapid is the development of economic life.

The desire to fix price proportions emerges continuously and on different historical bases. Wage relations in effect over an extended period become objectivised as if they bore the stamp of reason, justice, etc. in public opinion. This is why changes of wage rates in occupations connected organisationally, technologically or territorially, meet with the strong opposition of workers and often of economic and trade union leaders, although such changes may have the most objective bases.

12

COSTS AND OPTIMUM PRODUCTION IN SOCIALIST ECONOMY

Henryk Fiszel

THE QUESTION OF THE PRODUCTION COST CURVE has brought forth serious differences of opinion among economists. Starting off from the so-called law of diminishing returns, text-book economics accepts the form of the letter *U* as designating the limits of the marginal cost curve. This means, that with a rise in production, marginal costs will at first decline, and after reaching a certain point begin to rise. This idea applies of course to static conditions, i.e., to the assumption of unchanging production equipment.

Some economists who reject this 'universal law of production', jump to the other extreme. They maintain that the cost function is almost always linear in the short range. They thus accept *a priori* the proposition that the variable average costs are constant and its corollary that total average costs decline with the growth of production.

Practice, however, points to the phenomenon of rising marginal costs as an innate property of some machines and equipments. This is particularly the case in branches where production facilities find themselves at the limit of their productive possibilities.

As a matter of technology this fact cannot be doubted in the slightest degree. It is furthermore unthinkable that the allocation of production tasks can fail to take into consideration, for example, that power plants are subject to a considerable range of daily fluctuations in relation to the utilisation of installed capacity.

The situation is similar with regards to the chemical industry, in the so-called apparatus and electrolytical processes, in which marginal—and in their wake—also average costs rise in measure with the intensification of production.[1]

[1] This happens when the increase in production is attained by means of intensifying the production process. If the increase is accomplished by the

Thus, cost curves cannot be judged on the basis of pre-conceptions; in other words, their shape cannot be induced. Only empirically-confirmed facts can determine the cost function of different production branches.

Variants of increasing marginal costs must be considered by socialist economy in adopting any economic decision. Furthermore, in socialist economy, which is distinguished by the almost complete utilisation of its productive capacity, this problem acquires special significance. Hence, marginal costs rise with production changes in branches where the utilisation of facilities approaches the limit of their technical possibilities.

The matter is different in developed capitalist countries which as a rule do not fully utilise their productive apparatus, and often use the existing reserve under conditions of declining marginal costs.

Still another aspect of this problem must be considered, namely, the general-economic. In examining the cost function we must bear in mind the effects of the production volume on the preceding level of production in given branches.

Thus, the cost curve in power plants depends on the amount of electric energy consumed and also on the allocation of the energy used at different times by industry, particularly large energy-absorbing industries. If energy consumption rises in the so-called peak hours, marginal costs will rise; for, demand requires putting into use the less efficient facilities.

This is not a trait relating particularly to the power industry, which, as is known, is characterised by great daily fluctuations. It appears in other production branches as well.

In making any kind of decision to increase production, we must consider not only the direct outlays accruing from that decision. We must also consider additional expenditures which flow from it by industries supplying raw materials, equipment, electric energy, etc. This is, however, a factor whose consideration in economic accounting exceeds the possibilities of the given individual enterprises. For, guided by uniform prices received

extensive utilisation of the production apparatus (by increasing the number of shifts, for example), then marginal costs may also rise. At the bottom of this will lie not the properties of the machines, but subjective reasons (for example, decline of productivity on night shifts, etc.).

from outside, the enterprises cannot react to changes in production costs arising at the suppliers' end (in connection with an increased demand for raw materials). This matter can and should be considered on the higher planning levels.

The problem is as follows: what is the utilisation limit of production capacity, beyond which production becomes in general non-economical? It is obvious that this limit cannot be determined by the technical conditions of production. Therefore, the thesis voiced here and there that a socialist economy should utilise machines, equipment, etc., to the limit of their physical endurance, appears to be mistaken. Advocates of this thesis do not take into consideration the economic aspects of production, namely, the relation of outlays to results obtained from the intensification of technological processes. Hence, this thesis sometimes causes enormous harm, when realised in economic practice. It suffices to point at the fact that gains from intensification of technical processes result not rarely in the values of production increments being lower than the values of the raw materials consumed in their production.

On the other hand, the view that optimum utilisation of production capacity ought to fall at the point where the rise in marginal cost ensues, is likewise erroneous. Acceptance of this principle would indicate that the production obtainable with existing equipment ought to be acquired from new equipment, for which purpose they were installed. Yet, the additional production obtained under new conditions will not always be cheaper than that acquired with the old equipment. For, in case of a rise in production with old equipment it is possible to overlook the so-called capital costs (amortization, interest, etc.) because being independent of the volume of production, these are constant (rigid) costs. However, they would have to be treated as variable costs in the second case.

The problem of limits to the utilisation of productivity capacity also remains when we assume the constancy of variable average costs in single enterprises—or strictly speaking, in particular production aggregates. The problem exists where there are differences in cost levels between plants producing the same goods—differences resulting from changes in the technical levels, from varied natural production conditions, etc.

In the above case the problem arises: what is the limit in tech-

nically backward enterprises to capacity utilisation beyond which production becomes generally uneconomical?

If the problem is considered from the viewpoint of the economic accounting of an enterprise, then the solution is simple. Insofar as it operates rationally, an enterprise should be able to continue production as long as its marginal costs balance prices received from outside.

A similar approach would, however, be methodologically incorrect in reference to socialist economy, in which the question of optimum production must be examined not only from the viewpoint of the economic balance sheet of particular enterprises, but also from the general viewpoint of saving social labour. As is known, contradictions between the individual interests of an enterprise and the interests of society may occur—and do occur—even under the conditions of a socialist economy. Hence, in verifying that economy, the interests of society must first of all be considered; without forgetting, however, the interests of individual production units.

It is possible to formulate the following rule: *maximum utilisation of productive capacity can occur when marginal costs* (costs of the last group of products, taken as a unit, which is produced with existing equipment) *are equivalent to the total costs of the same quantity of products produced with new equipment complying with up-to-date technical requirements.*

A branch of production can be regarded as being in a state of equilibrium when each establishment reaches an equivalence between its marginal and total costs—as defined. Consequently, when the volume of production is higher or lower than the optimum, we have a state of disturbed equilibrium. In the first case, this is an expression of over-investment and, in the second case, of under-investment in a given branch of production. In both cases there is a squandering of both means of investment and of exploitation.

We may add that if prices are to reflect at every moment the indispensable labour expenditure—on the basis of the newest technique—then optimum production has to be registered at the point where prices equal marginal costs. But, as is known, price expresses the old rather than the new conditions of reproduction; for, it is a relatively static category compared to cost, which is distinguished by greater dynamism. Furthermore, price cannot

serve to the same degree as cost as an exact gauge of the thriftiness of social labour; since price, in its quantitative aspect, takes into account market conditions, and particularly the relations between supply and demand, besides the indispensable expenditure of social labour.

In view of the above, establishment of the maximum production dimensions is a matter of great importance in theory as in economic practice.

It is possible to risk the assertion that the secret of many failures of our economy lies concealed—among other things—behind the fact that we tend to ignore the question of optimum production. For it often happens that production results obtained at the expense of great investment outlays are cancelled out by the irrational exploitation—i.e., not in accordance with optimum conditions—, first of all of raw materials. To put it metaphorically, one branch of production in this case 'eats up' the fruits of another.

As a consequence, the index of production increases cannot be the only measure of economic progress, especially as pertaining to raw materials, semi-manufactures, etc. For, from the viewpoint of economic progress often a more rational exploitation of raw materials will give better results than an increase in production. As is known, the technical coefficient of production is characterised by the manner of raw material utilisation, in practice, it is called the technical norm which is defined by the number of raw material units required to produce a given unit of goods.

Incidentally, it is worth remarking that the statistical production index per inhabitant—widely adopted in practice (for steel, electric energy, coal etc.)—which is meant to define the place of given countries in the world economy, suffers from the type of deficiency discussed above.

II

Let us now turn to the method of calculating the above-mentioned magnitude of marginal and total costs which are indispensable to securing a point of equilibrium.

In practice, the problem of the maximum utilisation of the production apparatus can and should be placed within the confines of a choice between two possibilities, namely, increasing production

($\triangle P$) by means of producing new equipment or by attaining the same increase with existing equipment. Consideration of the first possibility (additional production with new equipment) requires an estimate of the total cost magnitude.

We make use of a series of assumptions for that purpose. We assume that the indispensable investment outlay to build facilities yielding production $\triangle P$ is equal to I_n; that the lifespan of the equipment is n years; and that the interest rate is s.

We calculate the yearly portion of capital costs with the equation below:

$$i_n = I_n \frac{s(1+s)^n}{(1+s)^n - 1}$$

The yearly rate of exploitation we designate with the symbol K (excluding amortization and interest). It is further necessary to calculate yearly costs (r_n) of capital renovation during n years. As we know, renovation takes place irregularly, only occasionally. Therefore, expenditures for that purpose should be discounted from the moment an enterprise is commissioned, and from then on broken up into equal yearly portions. Thus, if we designate by r the values discounted at that moment, then

$$r_n = r \frac{s(1+s)^n}{(1+s)^n - 1}$$

Hence total yearly costs required to obtain production of magnitude P are equivalent to $K_n = K + i_n + r_n$.

Considering the second possibility (increasing production with existing equipment), we establish the magnitude of increase in the indispensable cost (K') of obtaining increased production ($\triangle P$) by means of the existing equipment (K' will certainly be the marginal cost of that portion of production). Along with variable costs—in the exact meaning of the term—we consider additional expenditures in capital renovation as will be required by the equipment in the case of intensification of the production processes.

We suppose the data enumerated above as amounting to r.

It may also happen that despite expenditures on capital renovation the equipment may not last as long as it would under normal conditions of production. This fact must also be considered in the final accounting.

We reckon further that without additional overloading the life-span of equipment of value I will amount to n years; while in the case of an increase in load it will amount to n', in which case of course $n'<n$.

The yearly instalment from amortization and interest will amount to:

—in the first case $I\frac{s(1+s)^n}{(1+s)^n-1}$

—in the second case $I\frac{s(1+s)^{n'}}{(1+s)^{n'}-1}$

Therefore, additional expenditures accruing from the premature using up of equipment amount to:

$$i=I\ \frac{s(1+s)^{n'}}{(1+s)^{n'}-1}-I\ \frac{s(1+s)^n}{(1+s)^n-1}.$$

We can say by way of summary that the cost of the production increment ΔP will amount to $K'=\ '+r+i$.

The variant which shows the lowest costs will be profitable. If $K'=K_n$ then we can accept the proposition that that branch has attained a state of equilibrium.[2]

[2] The magnitude of the interest rate in socialist economy can be worked out on the basis of the following considerations:

Assuming two related investments which bring the same production results, except that the first variant absorbs much capital while the second requires higher exploitation costs in n years of utilisation of a facility;

If investment expenditures are designated by I_1, and I_2, and the cost of exploitation by K_1 and K_2, then we have the following disequilibrium:

$$I_1 > I_2\ ;\ \ K_1 < K_2$$

(K_1 and K_2 do not include amortization and interest on capital assets).

Assuming further that the combined sum of investment expenditures and costs in the first variant are equal to a similar sum in the second variant

$$I_1+K_1=I_2+K_2$$

then $$I_1-I_2=K_2-K_1$$

If I_1-I_2 is designated by i and K_2-K_1 by k, then $i=k$.

Taking the second variant we gain sum i on the investment and lose sum k (which is equal to i) during n years of the utilisation of the facility. The released capital i can of course be applied to the economy. Owing to this we can gain some increase in the national income which is equivalent to $d=ip$, where p is a certain coefficient.

But released capital i cannot be entirely used up in n years since each year k must be returned to cover the higher costs of production.

It is obvious that the above-formulated law does not cease to operate even when a branch of production is in a static condition, i.e., when it is not a question of increasing production but of maintaining it at the existing level. In that case, the equalization of marginal with total costs shows that the given branch of production has attained equilibrium in the sphere of technical progress. This, however, by no means proves that each enterprise connected with the given branch possesses the highest technique. It only shows that it is uneconomical to provide the given old plants with advanced technique or to modernize them.

Actually, the lack of equilibrium occurring where marginal costs (costs of the last group of goods produced with the old equipment) exceed total costs (identical group of products created with new equipment) is an alarming sign of the technical backwardness of a given branch of production, and of the need for its modernization.

Estimation of marginal costs in static conditions gives less trouble than calculating the anticipated costs of increased production.

Thus there remains at the disposal of the economy:

in the first year : $i-\frac{k}{n} = i-\frac{i}{n} = i\frac{n-1}{n}$

in the second year : $i-\frac{2k}{n} = i-\frac{2i}{n} = i\frac{n-2}{n}$

in $(n-1)$ years : $i-\frac{(n-1)k}{n} = i-\frac{(n-1)i}{n} = i\frac{1}{n}$

in n year: O.

The sum of capital at the disposal of the economy in $(n-1)$ years will be;

$$i-\frac{n-1}{n} + i\frac{n-2}{n} + \ldots + i\frac{1}{n} =$$

$$= i\left(\frac{n-1}{n} + \frac{n-2}{n} + \ldots \frac{1}{n}\right) =$$

$$= i\left(\frac{n-1}{n} + \frac{1}{n}\right)\frac{n-1}{2} = i\frac{n-1}{2}$$

and $\frac{n-1}{2}$ is of course capital which could raise the national income per annum; hence, in n years $i\frac{n-1}{2n}$.

The results in the sphere of a rise in the national income, gained by the economy in that manner, d, can be expressed in the following equation:

$$d = i\frac{n-1}{2n} \cdot \frac{1}{m},$$

where m signifies minimum capital absorption in the national economy (the

If for the sake of simplifying the argument we assume that the cost function in individual enterprises is linear, then we can observe that marginal costs on a production branch scale correspond to the sum of the variable costs in the more expensive enterprises.

Let us suppose again that the average variable costs of plants 1,2,3,4,...manufacturing the same goods amount to *a1*, *a2*, *a3*, *a4*; while total unit costs of products manufactured with new equipment equal *b*; then,

$$a_1 < a_2 < b < a_3 < a_4.$$

Supposing further that annual production equals

$$P_1,\ P_2,\ P_3,\ P_4,$$

then, marginal costs (understood as the sum of the variable costs of the most expensive plants) will be:

$$K' = P_3\ a_3 + P_4\ a_4$$

so that total costs (understood as the combined costs of the same number of products produced with new equipment) equals

$$K = b(P_3 + P_4)$$

Since $K' > K$, plants 3 and 4 will be higher than the optimum level; their modernization will be relatively economical.

In cases of relative capital abundance it is correct to allocate investments to such production branches. However, when there is a relative capital shortage the allocation of investment means should give priority to investments which pay off most rapidly.

number of capital units required to obtain an increase in the national income by units).

We get as a result

$$ip = i\ \frac{n-1}{2n} \cdot \frac{1}{m}.$$

Consequently the interest rate

$$p = \frac{n-1}{2nm}.$$

If capital absorption m equals *3*, and the average life span of a facility, n, is 20 years, we obtain the result:

$$p = \frac{20-1}{2 \times 20 \times 30} = 16\%.$$

It is worth observing that the magnitude of the interest rate is dependent to a minimum extent on the symbol n and reacts strongly to changes in m. For example: $n = 30$ years

$$p = \frac{30-1}{2 \times 30 \times 3} = \frac{29}{180} = 16\%.$$

An essential role is played here by the internal interest rate. Discounting anticipated savings to the time the investment is realised, and investigating the magnitude of the interest rate at which the so-called capital values will be equal to zero, we give priority to the investment which returns the highest interest rate.

With a certain simplification we can adapt the internal interest rate to the case discussed here.

Let us assume that the requirements for optimum production are exceeded by a number of production branches. With the aid of the symbols used above, we obtain:

$$\begin{array}{ccc} K'_1 & > & K_1 \\ K'_2 & > & K_2 \\ \vdots & & \vdots \\ K'm & > & Km \end{array}$$

(The subscripts designate branches of production 1, 2,...m).

The yearly savings from modernization or replacement of old with new equipment therefore amount to:

$$\begin{aligned} K'_1 - K_1 &= k_1 \\ K'_2 - K_2 &= k_2 \\ K'm - Km &= km. \end{aligned}$$

In compliance with the given definition it is necessary to find the rate of interest at which the anticipated savings, discounted at the time the enterprise is commissioned, is equal to the sustained investment outlay.

Thus :

$$(1)\ \frac{K_1}{1+r} + \frac{K_1}{(1+r)^2} + \ldots + \frac{K}{(1+r)^n} - I_1 = O;$$

$$\frac{K_1(1+r)^n - 1}{r(1+r)^n - 1} - I_1 = O;$$

$$(2)\ \frac{k_2}{1+r} + \frac{k_2}{(1+r)^2} + \ldots + \frac{k_2}{(1+r)^n} - I_2 = O;$$

$$\frac{K_2(1+r)^n - 1}{r(1+r)^n} - I_m = O;$$

$$(m)\ \frac{k_m}{1+r} + \frac{k_m}{(1+r)^2} + \ldots + \frac{k_m}{(1+r)^n} - I_m = O;$$

$$\frac{k_m(1+r)^n - 1}{r(1+r)^n} - I_m = O$$

I_1, $I_2 \ldots I_m$ represent the size of investment outlays in individual branches; r is the exact interest rate desired, while n represents the anticipated lifespan of the enterprise.

It is obvious that those modernization efforts will be the most profitable where r in the greatest. This method therefore allows us to determine the sequence of investment financing so that priority can be given to those bringing the highest interest returns.

III

We have thus far considered the question of optimum production in its long range aspects. This means that we considered the possibility of changes in the productive apparatus.

On that basis we have been dealing with the *absolute production maximum* in contrast to the *relative maximum*, with the assumption of unchanging existing production facilities. What is involved then is such an optimum allocation of production tasks among plants producing the same goods, as will enable the attainment of given production results at minimum costs.

This question becomes unrealistic when the production apparatus is fully utilized, or where the planned dimensions of short-range production are fixed (rigidly). It is known, however, that many branches of production do not utilise their full productive potentials. This happens either as a result of lack of markets (a very rare case with us) or because of difficulties in obtaining indispensable raw materials required to set into motion the whole production apparatus. This is a characteristic feature of our economy, whose bottleneck is the supply of raw materials.

It is understood that production tasks should be so allocated so as to make it possible to utilise the productive power of the most efficient enterprises, first of all. Of course, their average total costs cannot be the basis for grouping enterprises in accordance with their economic efficiency. On the contrary, it is the level of variable costs per output unit which determines the degree of efficiency. For, the manner in which the allocation of production tasks is accomplished for individual products, has no influence on the constant costs of branches of production.

Actually, gross variable costs (yearly for example), reckoned on a branch scale, remain closely dependent upon the production range

of individual plants, whose economic efficiency is characterised by their own levels of variable costs.

In order to achieve minimum costs it is therefore necessary in the first place to utilise the full capacity of the most efficient plants, and to proceed then to the less efficient until the required production volume is attained.

That is undoubtedly correct in cases concerning variable costs which rise proportionally or less than proportionally to the magnitude of the production increase.

However, in cases where production is in the phase of rising variable unit costs, the optimum allocation of production ensues when the marginal costs of all enterprises producing a given article are equal.

IV

We have thus far considered the question of the relative optimum under conditions of single-type production. We have shown that locating the optimum makes sense when production capacity on the scale of a branch of production is not fully utilised.

The approach to these questions will be different in the case of alternative production, where two or more different products can be produced with the same equipment. For, in this case there exists the posibility —even the necessity—of such an allocation of production tasks among plants, that the combined costs involved will be the lowest possible, regardless of the utilisation level of the productive apparatus. In other words, the question here is to reach such a level of plant specialisation so that all the different goods can be produced at the lowest possible cost.

The problem of the components embraced in cost accounting today requires certain modifications relating to the consideration of homegenous goods production.

We pointed out above that the variable, not the constant costs, determine the degree of a plant's efficiency. For, on the scale of a branch of production the variable costs decide the magnitude of gross costs. As regards the costs of alternative production it is necessary to exclude from their accounting all variable component elements which must anyway be covered, regardless of what is produced (product I or II) or of the proportion in which corresponding goods

can be produced (the cost of maintaining the temperature of the product-mass in glass factories, for example).

Here only the so-called direct costs are important from the viewpoint of plant efficiency. This is correct under conditions where all plants in a given branch of production are kept in motion.

Further reference to the costs of *i* articles in factory *j* must be understood in the sense formulated above, namely, without costs of amortization or interest on capital, and without other constant costs (administration, etc.) or related costs which simply cannot be reckoned into individual products.

We begin with a simplified example involving two factories (*a* and *b*), each able to produce only two products (*1* and *2*) at differing unit costs.

The following two cost variants of articles produced in these factories are possible: the first is characterised by discordant cost account relations. Thus,

	in the first case	in the second case
	$K_{1a} > K_{1b}$	$K_{1a} < K_{1b}$
	$K_{2a} < K_{2b}$	$K_{2a} > K_{2b}$

K_{1a} denotes the cost of the first product in plant *a*
K_{2a} ,, ,, ,, ,, second ,, ,, *a*
K_{1b} ,, ,, ,, ,, first ,, ,, *b*
K_{2b} ,, ,, ,, ,, second ,, ,, *b*

It is clear that in the first case product *1* must be allocated to plant *b* and product *2* to plant *a*. In the second case the allocation will be reversed.

Let us now consider the second variant in which the cost account relations are harmonious. Thus,

$$K_{1a} > K_{1b} \quad \text{or} \quad K_{1a} < K_{1b}$$
$$K_{2a} > K_{2b} \quad \text{or} \quad K_{2a} < K_{2b}.$$

To simplify the matter let us assume that both plants utilise their productive capacity to the same degree.

For the purpose of the optimum allocation of production tasks we make use of the so-called unit coefficient—which is the quotient of the cost of articles produced in 'cheaper' factories to costs in the more expensive' ones.

$$\frac{K_{1b}}{K_{1a}} = m_1 \qquad \text{and} \qquad \frac{K_{2b}}{K_{2a}} = m_2.$$

Analysis of the interrelation between these coefficients enables the specialisation of factories producing articles *1* and *2*.

Hence, for example, if $m_1 < m_2$ then we place the maximum number of articles in factory *b*, which (according to our assumption) produces articles *1* and *2* more cheaply. Since factory *b* is able to produce article *1* relatively more cheaply than article *2*, it is necessary, as we saw, to first of all utilise the factories' productive capacity to produce article.

The problem becomes very complicated if we deal with a greater number of articles capable of being produced in different factories, which, while producing indentical articles, absorb dissimilar portions of the productive capacity of individual plants. We can locate the optimum by employing a very complicated method, namely, *linear programming*.

Let us assume that a given number of factories *m* have to produce *n* different articles of quantities:[3]

$$Q_1, Q_2 \ldots\ldots\ldots Q_n$$

Let C_{ij} represent the productive capacity indispensable in *j* factory to produce output units of group *i* (productive capacity may be expressed in machine-hours, etc.). In this connection we can arrange the following matrix schedule of the capacity loads of *m* factories, producing individual units of article *n*:

$$\begin{matrix} C_{11} & C_{12} & C_{1m} \\ C_{21} & C_{22} & C_{2m} \\ C_{n1} & C_{n2} & C_{nm} \end{matrix}$$

We can in this manner set the productive capacity load of factory *j* in relation to production X_{ij} of group *i* units. This load will therefore be equivalent to $C_{ij} K_{ij}$.

If we further designate the production costs of group *i* in factory *j* by C_{ij}, then we can also arrange the matrix unit cost schedule of particular production groups in individual factories.

$$\begin{vmatrix} K_{n1} & K_{n2} & K_{nm} \\ K_{21} & K_{22} & K_{2m} \\ \vdots & \vdots & \vdots \\ K_{11} & K_{12} & K_{1m} \end{vmatrix}$$

[3] See Oscar Lange. *Introduction to Econometrics*, (PWN.1958). p. 322.

Hence the result that the gross cost of group i products produced in all factories is equivalent to:

$$\sum_{j=1}^{m} K_1 X$$

Whereas the gross production costs of all assortments will be:

$$K = \sum_{i=1}^{n} \sum_{j=1}^{m} K_{ij} X_{ij}$$

Production allocation among the factories will stand at an optimum, when $K = \sum_{i=1}^{n} \sum_{j=1}^{m} K_{ij} X_{ij} = minimum.$

The problem therefore depends on designating nm the unknown X_{ij} $(i=1, 2.....n;\ j=1, 2.....m)$.

Besides the condition $K=minimum$, additional conditions must be fulfilled, namely, the internal harmony of the plan. That will be:

$$\sum_{j=1}^{n} X_{ij} Q_i;\ i=1, 2.....n.$$

This means that quantity i of the articles produced in m factories should correspond to the production programme Q_1

$$\sum_{i=1}^{m} C_{ij} X_{ij} \leq C_j;\ j=1, 2.....m,$$

which indicates that the load of the given plant cannot exceed its productive capacity. $X_i \geq 0$.

This condition is dictated by common sense since production cannot be a minus quantity.

It is worth mentioning that today electronic computing machines can solve systems of equations with a large number of unknowns. Owing to this, the possibility exists to calculate the optimum allocation of production tasks by adopting the method of linear programming where many factories and a large variety of products are involved.

We give below a simplified example which may be solved by a common adding machine.

Assuming that four factories have to produce three difierent products in quantities:

$$\left| \begin{array}{l} Q_1=300 \\ Q_2=400 \\ Q_3=100 \end{array} \right| .$$

The matrix capacity load schedule of factories producing individual units of articles is as follows :

$$\begin{vmatrix} 2 & 3 & 3 & 4 \\ 5 & 6 & 5 & 6 \\ 10 & 12 & 15 & 13 \end{vmatrix}$$

Following is the matrix unit-cost schedule of individual articles in each of the four factories :

$$\begin{vmatrix} 10 & 11 & 12 & 13 \\ 20 & 21 & 18 & 22 \\ 30 & 28 & 33 & 30 \end{vmatrix}$$

Accepting that the production efficiency of each of the four factories amounts to a load of 1000 units, then the matrix production schedule of individual articles in each of the four factories is the following:

$$\begin{vmatrix} X_{11} & X_{12} & X_{13} & X_{14} \\ X_{21} & X_{22} & X_{23} & X_{24} \\ X_{31} & X_{32} & X_{33} & X_{34} \end{vmatrix}$$

The problem is to discover the 12 magnitudes: $X_{11}, X_{12} \ldots\ldots X_{34}$ in such a manner as to preserve certain conditions. The combined total number of articles produced at all the factories concerned should be equal to the planned amounts.

$$\begin{vmatrix} X_{11}+X_{12}+X_{13}+X_{14}=300 \\ X_{21}+X_{22}+X_{23}+X_{24}=400 \\ X_{31}+X_{32}+X_{33}+X_{34}=1000 \end{vmatrix}$$

The combined production costs of all these quantities should be as low as possible.

$$10X_{11}+11X_{12}+12X_{13}+13X_{14}+20X_{21}+$$
$$+21X_{22}+18X_{23}+22X_{24}+30X_{31}+28X_{32}+$$
$$+33X_{33}+30X_{34}=min.$$

Furthermore, the full load of individual factories cannot exceed their productive capacity.

$$2X_{11}+5X_{21}+10X_{31}\leq 1000$$
$$3X_{12}+6X_{22}+12X_{32}\leq 1000$$
$$3X_{13}+5X_{23}+15X_{33}\leq 1000$$
$$4X_{14}+6X_{24}+13X_{34}\leq 1000$$

The number of individual articles produced in each factory cannot be negative.

$$X_{11} \geqq O, \quad X_{12} \geqq O, \quad X_{34} \ldots . \geqq O$$

Solution of this problem by the Dantzig Simplex method establishes the following matrix production schedule:

Values X_{ij} :

$$\begin{vmatrix} 300 & 0 & 0 & 0 \\ 80 & 0 & 200 & 120 \\ 0 & 83 & 0 & 17 \end{vmatrix}$$

Consequently $X_{11}=300$; $X_{21}=80$; $X_{23}=200$; $X_{24}=120_2$; $X_{32}=83$; $X_{34}=17$; $X_{12}=X_{13}=X_{14}=X_{22}=X_{31}=X_{34}=0$.

Article *1* will be manufactured in factory I, article *2* in factories I, III, IV, and article *3* in factories II and IV.

This manner of allocating production enables the following capacity utilisation by individual plants:

The first factory will exhaust its production possibilities since

300 pieces (of article *1*) $\times 2 =$ 600
80 pieces (of article *2*) $\times 5 =$ 400
Total 1000 unit load.

The second factory does not quite fully accomplish the above, because 83 pieces (of article *3*) $\times 12 = 996$ unit load.

The third factory also utilises fully its productive power since, 200 pieces (of article *2*) $\times 5 = 1000$ unit load.

The fourth factory, however, only partly utilises its productive capability, for, 120 pieces (of article *2*) $\times 6 = 720$.

17 pieces (of article *3*) $\times 13 = 221$
Total 941 unit load.

As a result, the plan will be fulfilled by utilising the production capacity of all factories to the extent of 3937 unit loads.

The picture presented above can be realised by a type of economy in which the command over production as well as over its volume and assortment is directed 'from the top' (from centralised authority or ministries).

It is clear that the rational allocation of production is not accomplished spontaneously nor by exclusively economic means, such as prices for example. For these means may themselves cause the dis-

location in relation to the principle of minimising costs on a branch of production scale. There is not any doubt that we could take an example in this respect from capitalist concerns who for the purpose of maximising profits limit production in the most expensive plants and concentrate it in those which produce most cheaply.[4]

Rationalisation of production in a socialist economy requires application of the same method where it is reasonable to restrict or specialise production for the purpose of effecting the maximum saving of social labour.

The proper organisation of production may, however, come into collision with the economic accounting of the activities of single enterprises. The approach of individual enterprises in their striving to maximise their economic results, does not necessarily correspond with the interests of the economy as a whole, or even with those of a branch of production. On the contrary their interests often diverge.

Let us cite two examples. As a result of idle productive power existing in a given branch of production, it becomes necessary—in correspondence with the principle of cost minimisation—to restrict production in the least efficient plants. This, however, will have a negative effect upon these plants; for the constant costs devolve upon a smaller number of products.

The second case pertains to the opposite situation, namely, when the productive apparatus is almost fully utilised and the further growth of production can be utilised through higher marginal costs. If that is profitable from the viewpoint of a general increase in production with existing equipment, then it is generally unprofitable for the enterprise. The financial position of the enterprise will be

[4] In his work 'The Social Revolution' (in the second part, entitled, 'The Day After the Social Revolution') Karl Kautsky pointed to the enormous importance the rationalisation of production will acquire in the future socialist society. It is worth citing a relevant passage :

> There are various ways to increase production; two of these (the most important) have already today acquired great importance. Both have been applied by American trusts from whom we can learn not a few important things in respect to the methods of social revolution. The trusts show us how it is possible to raise labour productivity at one stroke. That is done simply by the accumulation of collective production in the most advanced enterprises and all the others, which are on a lower level, remain idle (Cracow, 1903, p. 109).

aggravated if the increase of production and costs, cause the marginal costs to exceed the prices of the given products.

The contradictions between the interests of individual branches of the economy and the interests of society, which apply to contemporary capitalism, do not by any means disappear in a socialist economy. For, it is impossible to maintain that the attainment of an optimum condition in the economy as a whole, is synonymous with its attainment by individual enterprises.

13

ECONOMIC ACCOUNTING OF INVESTMENT EFFECTIVENESS

Mieczyslaw Rakowski

1. THE CONCEPT OF INVESTMENT EFFECTIVENESS

A DEFINITION OF INVESTMENT EFFECTIVENESS is simple under capitalist conditions. Since profit is the sole aim of capitalist production, the relation between the planned or realised profit and the capital input is the only criterion of investment effectiveness. An investment is effective to the extent that at least the average rate of profit on capital is attained from it.

The question arises whether the profit criterion can apply to socialist economy. It seems to me that profit cannot serve as the main criterion of investment effectiveness in a socialist economy, for several reasons:

(1) The aim of socialist production is not profit maximization but maximization of the national income, i.e., of total consumption and accumulation on the national economic scale.

(2) Motivated by various considerations, the State to a large extent alienates the prices of goods from their values; and no price reform—aiming to correct the most shocking mistakes in existing price relations—can alter this situation. It is understandable that under these conditions, profit—as the difference between prices and production costs—cannot be objective magnitudes.

(3) What he produces is a matter of indifference to the capitalist and he can therefore compare all values with each other. But under the conditions of our economy—the task of which is to produce definite use values—the comparison of the usefulness of varied goods cannot be the basis for comparing either their production effectiveness, or the effectiveness of the investments directed to their production.

(4) In our economy the effects of the growth of a given line of production on various other branches and economic regions must be investigated most accurately over the long range. And that

investigation should by no means be made from the standpoint of profit maximization of individual enterprises.

For the above reasons the criteria for investigating investment effectiveness must be applied—under our conditions—not to profits but to concrete use values. These criteria may be formulated as the requirements for the maximum production of use values with the available material means and human resources.

Economic accounting ought to help in the fulfilment of these requirements. By estimating investment effectiveness, economic accounting plays an important, although not an exclusive role in this respect. First, it is not in a position to embrace a series of economic elements which are difficult to measure, or which are immeasurable—area development, for example. In other words, economic accounting cannot go beyond the limits of economic analysis and it is consequently unable to embrace a series of social and political investment effects. This is why a decision concerning a choice between given investment variants may often be far apart from a decision based exclusively upon the results of an economic accounting.

But in this case one must know the economic balance sheet so that the deviations from it may be fully understood.

II. THE CONCEPT OF INVESTMENT EFFECTS

We are concerned here in the first place with use values which are expressed in defined natural units. However, investment effects —principal or auxiliary—may also take the form of savings of either living or materialised labour as well as of hard currency reserves —insofar as the investment has a clear export- or import-reducing character. Furthermore, investment may consist of heterogeneous combinations of these three results; and economic analysis should know how to apportion them.

Often the effect of an investment is not synonymous with the fact of its application. This is the case when an enterprise can produce products on different scales and in varied proportions. Investment effectiveness accounting must take this fact into account so as to assure the optimum correspondence between means of investment and labour power as well as with the turnover (fertilizers in agriculture, for example), in order to obtain the best possible results.

One of the most important ways to increase the effectiveness of a given investment is the proper fixing of the character of production, particularly of its specialization and cooperation (division of labour). While we measure the useful effects of an investment principally by means of natural units, still, we are often obliged to amend, or even to depart from that principle.

The question is relatively simple when the production assortment is more or less similar and can be reduced to approximately homogeneous conventional units. Matters become more complicated when the products of individual enterprises are not comparable—for example, different coke-chemical products, different agricultural products of one farm, etc. The necessity arises then to apprehend these products in the form of values with the purpose of reducing them to a common denominator. It is understandable that the correctness of this approach depends upon the correctness of the price system. The value approach is often indispensable for complicated results in savings; and it is furthermore, the only one possible for effects in hard currency.

In order to eliminate frequently-occurring defects in the system of estimating production and in the price system, it is possible—depending on circumstances—to eliminate the investment turnover from the value of production; or else, to calculate net production so as to eliminate disparities in the quantity and quality of consumed raw materials. There is a widespread method of estimating the results of investment in export goods as a net hard currency gain; that is, minus the currency values of raw materials and other items which could themselves be independent subjects of international exchange.

The range of results comparability. The results obtained in an analysis of different variants of an individual enterprise must be very close in relation to both quantity and quality. This does not mean that they must be identical. There may, for instance, be differences of a certain degree in the assortment and quality of production, in the range of cooperation and specialization. There may also be different levels of utilisation of side-line production, etc. The comparison of results within the framework of a branch of production confronts less rigorous requirements. For, we can compare enterprises of similar production profiles but with entirely different production volumes (e.g., relatively small modernisation investments with large enterprises).

A still broader field is effectiveness comparison between production branches. First of all, we can compare the results gained from properties which are to a certain degree similar (e.g., coal, oil and gas; steel and aluminium; steel and cement; copper and aluminium; copper, lead and plastics; meat and fish; artificial and natural fibres, etc.).

A second sphere of intra-branch effectiveness comparison is that of respective currency results. From the viewpoint of exports it is, in principle, a matter of indifference what we export for in any case the result is a gain in foreign exchange.

The third sphere is that of comparison of results in savings of materialised or living labour. Finally, the fourth sphere of intra-branch comparisons is that of a production increase in some branches and savings in others. For, from the viewpoint of the national income a rise in production and reduction of wear and tear are equivalent.

III. THE CONCEPT OF INVESTMENT OUTLAYS

The emergence of new use values is connected with not only direct outlays—confined to the direct aim of the investment itself—but also with subsidiary and indirect outlays. Subsidiary outlays are understood here as expenditures on various services indispensable to the realisation of the given investment, which are often made by other investors. By indirect outlays are meant expenditures in other production branches or in unproductive spheres (housing, for instance) which must be borne parallel with the development of production of given articles.

In analysing the investment outlays of individual enterprises which obtain different results, the most important problem is the division of the total sum of expenditures and its apportionment in relation to individual effects. This will make it possible to compare the ratio between outlay and results in these enterprises as compared with similar ratios as obtained or as possible of attainment elsewhere.

Thus, in expanding or in reconstructing existing enterprises, that portion of expenditures which is assigned not to increase but to maintain the existing production level, must be subtracted from the sum of building outlays, since otherwise expansion will be unfavourable as compared to building new enterprises.

In cases where uniform technological processes are used for turning

out varied products—which may be produced serially—it is appropriate to apportion the combined investment outlay among the particular types of products in proportion to the indispensable expenditures for the production of each series.

Outlays for the modernization of existing plants—intended for both a production increase and reduction of costs—must be divided proportionately in relation to both the above results.

The division of expenditures within entire production branches is of particular importance for investment programming.

The first problem here is to apportion such outlays—out of the total sum of expenditures earmarked for the growth of the production branch—as will not in the main bring production increases. Such outlays include: (1) expenditures to cover physical wear and tear of constant capital; (2) expenditures to replace 'moral' wear and tear; (3) outlays on technical renovations which bring economic results without increasing production, and finally, (4) that part of the general outlay which does not result in a production increase in the period examined and which consists of the difference in the frozen 'unconnected-with-production investment outlay' at the end and beginning of the examined period.

The second important problem of allocating investment outlays within production branches is their allocation for different types of expenditures—for new construction, for expansion or modernization of existing enterprises. Each of these types of investment has its advantages and disadvantages. New enterprises, for example, can be built on the basis of a high technical level and on the most convenient location; whereas, it is not always possible to attain the highest technical level in the expansion or modernisation of existing plants since they are limited by the existing technological disposition. The location, furthermore, may often not be the best since it is predeteremined; while raw material possibilities and other indispensable conditions for expansion may be limited. On the other hand, new construction generally takes longer than the expansion of existing plants. So does the starting off period. Besides, new building requires large outlays for housing construction, an appreciably greater number of auxiliary expenditures as well as the assembly of experienced personnel at the new site.

Establishment of the relation between auxiliary and direct investments is relatively simple. It requires only calculation of the

rate which the basic investment profits from auxiliary expenditures.

Indirect investments cause greater difficulties. In examining the investments of branches which supply a given enterprise with raw materials and equipment, the difficulties can be partly surmounted by an agreement between the given enterprise and its suppliers to form a 'combine' (in respect of the quantities of raw materials used). An enterprise consuming less raw materials will of course require a smaller combine.

To avoid complications connected with examination of indirect investments it is possible—in relation to export items or those reducing imports—to apply such investments only to the net hard currency acquisition, i.e., after deducting the foreign exchange values of the raw materials. In other words, only the process of transformation is investigated.

In reference to goods destined for the domestic market, it is possible—by omiting the analysis of indirect outlays—to take clear production gains as the reference arrangement, i.e., without transferring values.

The second variety of indirect outlays are those of marketing or of transportation to consumers. These may be different kinds of investments depending on the qualities of the goods involved (e.g., heating boilers with brown instead of with pit-coal requires, in terms of the same quantity of heat calories, larger hearths, larger boilers, coaling facilities, etc.).

The third kind are unproductive investments—housing, communal facilities and social services, etc. Investments of this type are partly connected with general social tasks which result from the policy of improving housing conditions and social amenities as well as from the growth of population. These tasks may not be directly related to the construction of a given enterprise. However, the fact remains that with the construction of enterprises in different localities, their employment needs will themselves induce various outlays for housing—depending on the size of the labour force in the given regions, who could be employed without additional housing construction.

IV. THE PROBLEM OF EXPLOITATION COSTS

In general, exploitation costs occupy the principal place in effec-

tiveness accounting. This is why a mistake in establishing them will, to the greatest degree, distort the true indices of investment effectiveness. On the other hand, exploitation costs constitute the most fluid ingredients of accounting for the reason that—in distinction from single-transaction outlays—they concern also the hard-to-define shape of future costs.

In reference to direct costs it is necessary to take into account not only the immediately appropriate costs, but also the rise of costs in time as a function of the growth of production. This consideration enables us to determine the roles of constant and variable costs as well as to disclose the high individual costs at the beginning of a period of under-utilisation of productive capacity.

In certain cases, as for example, when a plant may obtain raw materials of different quality, particularly in export investments—when we are concerned only with the results of manufacturing—we consider only the manufacturing costs; while we apply the cost index to unit results during the production period (e.g., to value increases per unit, or also to the rise in hard currency results per unit, i.e., to the net gain in foreign exchange).

The cost of raw materials consumed in production of course includes the cost of their transportation. Nevertheless, that cost is often considered as uniform, as independent of the true costs, resulting from the location of the points of delivery and receipt. This is why effectiveness accounting—which has to consider not the nominal but the actual general-economic cost—must price raw materials at the point of delivery, calculated on the basis of prices at the point of manufacture as well as the true costs of transportation.

Let us now return to the question of the indirect, consumers' costs. The necessity of considering this question—primarily in relation to the costs involving the ultimate consumer—results from the very nature of investment effectiveness accounting. It is necessary here to first of all consider transportation to the consumer as well as to the effects of the quality of the products on consumption costs. This is required for establishing the changes which will arise in consumers' costs in terms of like consumption results of similar use values (for example, how the wear and tear of 100.000 kilometers driving on one type of automobile tyres will conform to that of tyres of a different quality).

Inasmuch, however, as differences in the quality of products

are considered in their prices, there is no need to adjust production costs to differences in indirect costs—to the extent of course that quality differences are adequately considered. Expenditures on capital renovation, which do not enter the composition of current exploitation costs, must be considered in investment effectiveness accounting like costs of exploitation.

V. PRICES IN EFFECTIVENESS ACCOUNTING

All the prior analyses of economic magnitudes—investment outlays, exploitation costs, capital renovation as well as consumption results—as long as they are comprehended in terms of value in the case of complex assortments depend upon price relations. In this connection, investment effectiveness also depends upon the disposition of prices, consisting in one or another respect on the relation between outlays and results.

Effectiveness accounting most closely corresponds, in this respect, to price systems which are proportionate to the indispensable social labour expended in the production of individual goods. Unfortunately, as already explained in the introduction, that is not possible. With the prevailing price system, effectiveness accounting will in this respect always be distorted to a greater or lesser degree, and it will always necessitate corrections in order to alleviate the most glaring deviations in the proper relationships. It appears from the above that there will always exist the need to achieve effectiveness accounting not only in terms of necessary current prices, but also in prices correlated in accordance with a certain price list, centrally prepared for the requirements of investment effectiveness accounting. Additional estimates will also be required in cases of clearly-delineated changes in anticipated future price-cost relations. These three accounting methods will undoubtedly lead to different results; and it follows from this fact that a true estimation of their usefulness requires a penetrating analysis.

The essential problem is to reduce to a common denominator the domestic costs and the costs of raw materials and imported investment goods in cases where we desire to estimate the total labour expended on the results obtained, and not only the production costs of the imported hard currency raw materials. In these cases the prices of imported goods can be reckoned in accordance

with the mean consumption costs of foreign exchange units, i.e., according to the current exchange rates—36 zloty per dollar.

VI. PROBLEM OF THE EXPLOITATION PERIOD

Determination of the complete exploitation period is a matter of great importance since investment effectiveness will assume different shapes if the exploitation period lasts 10 or 30 years.

Certainly the assumption of the exploitation period cannot be arbitrary. It depends on physical as well as on economic, i.e., on the so-called 'moral' processes of consuming equipment. Each type of equipment has a different physical and economic life-span. Since in this respect almost every enterprise embraces a complex of equipment, the calculated exploitation period must of necessity be conventional. It may be regarded as a quotient of the joint investment values and the annual average amortization of all equipment.

The economical consumption of equipment in a socialist economy depends upon the general balance sheet of labour power compared to the investment means available for economic growth.

A measure of the acuteness of this problem—as is the case in general with the question of proper outlays for technical progress—is the so-called amount of time permissible for a return on these outlays. We understand this concept as the time limit during which the savings obtained should compensate for the expenditures incurred in gaining them. Let us assume conventionally that the period is 6 years. Consequently, if for example, the old equipment has a higher cost of exploitation by 100,000 zloty, than analogical new equipment, and the new equipment cost less than 600,000 zloty, then the time of return on the outlay—for replacing the old with new equipment—is less than 6 years. In that case it is necessary to change them although they could have been used for another 10 years of their physical consumption period.

Establishment of the anticipated durability period of new equipment—from the viewpoint of their future economical utilisation—poses great difficulties. We can operate here only in the realm of probabilities. By establishing on the basis of previous experience and other premises a certain rate of economic progress in the sphere of costs and investment outlays in a branch of production, it is

possible to calculate whether the given equipment will exceed the limit of its economical effectiveness in 10 or 15 years, and if it will be necessary to replace them. This means that its estimated period of exploitation will have to be defined as 10 or 15 years; and not as 25 which would be the case with its physical consumption. The problem of the economic aging of equipment bears particular importance for spheres of rapid technical progress. It is worth indicating that the establishment of the exploitation period of equipment can influence the manner of their construction and that of buildings connected with them, etc. For example, establishment of an appropriate short-period of economic exploitation may bring about acceptance of less durable building materials and hence corresponding investment savings.

VII. FREEZING INVESTMENT OUTLAYS

The freezing of investment outlays may be connected with the construction period or with the exploitation period of an enterprise. It expresses either the lack of, or the under-utilisation of productive investments. Certain constant fragmentary expenditures are incurred during the construction of an enterprise. From the moment they are sustained to the time the enterprise is commissioned, these expenditures are not utilised for production purposes. The product of these fragmentary outlays and the above-mentioned period constitute their freezing in buildings, and is expressed in 'zloty years'. The sum of these fragmentary expenditures over the whole construction period equals the frozen investment outlays, and the quotient of the amount of frozen expenditures and the total investment outlay gives the average period of expenditure freezing.

If investment outlays are carried proportionally over the entire construction period, then the average period of expenditure freezing is equal to half the construction cycle. But if they are concentrated at the beginning of the construction process then the freezing period is greater than half the construction cycle. And if expenditures are concentrated at the end, they are correspondingly smaller. Apart from the general gain in shortening the investment cycle, this indicates the importance of a reasonable concentration of outlays towards the end of construction. It also shows the suitability of eventually 'congealing' sections of enterprises before the final

completion of the construction, with the aim of lessening the freezing. Concerning the freezing of expenditures during the exploitation period, this results—as indicated above—from the under-utilisation of production capacity, and finds its expression in higher production costs per unit in the period approaching capacity utilisation. The means for shortening this freezing and lessening the losses sustained, is the eventual breaking up of the investment in several stages which may be far apart.

VIII. PROBLEMS OF A SYNTHESIZED INVESTMENT EFFECTIVENESS INDEX

We have hitherto considered the separate problems of an investment effectiveness economic accounting. Each of these problems, such as capital formation, unit costs, enterprise durability or the question of the freezing period can and ought to be subjects of a deep analysis. However, such analyses cannot provide decisive answers regarding the effectiveness of the examined enterprise, or of the investment complex, if they do not embrace the entire problem; and optimum costs, for example, may not converge with optimum outlays, etc. There is, therefore, the need for a synthesized approach in evaluating investment effectiveness in order to determine the related optimums of all the main elements of investment effectiveness accounting.[1]

In the considerations that follow, we based ourselves on the principle that two investment variants, *A* and *B*, will have the same effectiveness, if using the latter instead of the former will not disturb the effectiveness dynamic of the national economy in preserving the equilibrium of labour power. At the same time, the discussion of methods for calculating investment effectiveness —in the USSR as in Poland—indicate the following as being the most difficult accounting tasks: (1) the freezing of investment expenditures in periods of construction; (2) differences in the durability of investment objectives, and (3) the disproportional dispersal in time of production and costs.

[1] A wide discussion of the forms of such a synthesized accounting has been and continues to be carried on in Poland. The views on the question presented below—which were accepted by the Committee on Methodology of the Planning Commission—appeared in an article by Professor Kalecki and myself, entitled, 'A Generalised Formula of Investment Effectiveness,' *Gospodarka Planowa*, No. 11, 1959.

(a) The Simplest Form of an Investment Effectiveness Formula

Let us begin by considering a much simplified national economic model in which the construction of enterprises assumes 'lightning speed'. Here the problem of freezing construction investments does not appear when all the investments are of the same duration —let us say, 20 years. Hence, the problem does not arise of different exploitation periods. Finally, in this model production and costs are constant over the entire period of exploitation of the enterprise, and therefore the problem of the dispersal of production and costs in time does not arise. There remains in this simplified scheme only the question of the permissible magnitude of additional outlays ($\triangle I$) yielding reductions in the exploitation costs ($\triangle K$) in the compared investment objectives, which are characterised by a time limit for returns on expenditures (T). Magnitude T should be selected in such a manner as to favour the maximum increase in the national income by means of disposable investment funds. There exist broad possibilities in the economy to lower costs by substituting new for old equipment, by the modernisation or mechanisation of the labour process. Since these possibilities can aid in achieving relatively lower investment outlays with the time of return T—less than 6 years—then allocations for additional cost reductions, which exceed this limit, constitute a waste of investment means. Under considerations of a choice between two comparable variants which yield the same output, variant two can be represented as follows:

$$I_2 - I_1 < (K_1 - K_2)T,$$

or

$$\frac{I_2}{T} + K_2 < \frac{I_1}{T} + K_1$$

In other words, that variable is preferable in which

$$(1) \qquad E = \frac{I \cdot \frac{1}{T} + K}{P}$$

is lower (K does not include amortization).

We assume that this formula is correct only for the standard period n_s (let us say 20 years), while other periods require corresponding corrections with which we deal later.

(*b*) *Considering the Results of Freezing Investment Outlays in Building Construction*

It is understandable that the length of the building period and the freezing of outlays resulting from it exert an influence on investment effectiveness. What is involved here is the manner of consideration of this influence. It is first of all obvious—as we saw above—that this influence is proportional to the volume of frozen outlays in the construction period.

We now consider what effect outlay freezing in buildings has upon the general economic situation.

For this purpose we weigh the actual investment process in the simplified model where construction is effected very speedily. In this model, expenditures—which are gradually frozen in the construction of the given enterprise—could be placed without delay at the disposition of the national economy to create income. We designate by Q_2 the net national income created per output unit (with magnitude Q_2 we deal later). In the simplified model the total income up to the completion of construction will amount to $Iq_z n_z$. In other words, as a result of freezing, expenditures on the considered objective will amount not to I but to $I\ (I + q_z n_z)$ on the basis of the simplified arrangement.

Consequently, formula (*1*) requires the following modifications:

$$(2) \qquad E = \frac{I\frac{1}{T} \cdot (I + q_z n_z) + K}{P}$$

There remains the question of defining magnitude q_z, the net national income produced annually per unit of investment outlays actually frozen and 'harnessed in production' in the model of building with 'lightning speed'. We assume that the outlays create a national income of average branch structure, and we designate as m the capital formation of the gross national income (i.e., the required m investment zloty to obtain one gross income-zloty per year). Consequently, the gross national income per zloty invested amounts to $\frac{1}{m}$ yearly, and the net income after deduction of wear and tear, the coefficient of which we designate as V amounts annually to $\frac{1}{m} - V$. It may appear that q_z will exactly equal the last amount; but our reasoning requires an important correction. This concerns the fact that an increase in the national income requires

not only investment outlays but also additional employment. In achieving labour power equilibrium it is indispensable to incur a certain investment expenditure for making available a corresponding number of workers for the national economy.

In order to increase the gross national income by d requires not only direct investment outlays ($m\ d$) but also expenditures to make available the labour power necessary to create d. We designate the wages required by d as rd and the corresponding investment outlay of a limited return period, as $T\,r\,d$. Consequently, the increase in gross national income, d, will require the combined outlays $m.\ d+T.\ r.\ d$; and the yearly gross annual income per investment zloty will amount to

$$\frac{d}{m.d+T.r.d} = \frac{1}{m+T.r}.$$

In other words, in order to have a labour power equilibrium the gross annual unfrozen income zloty invested amounts not to $\frac{1}{m}-V$ but to $\frac{1}{m+T.r} - V$. We can therefore define q_z as follows:

$$q_z = \frac{1}{m+\mathrm{T}.r} - V.$$

Accepting that under Polish conditions $m=2{,}5$; $T=6$; $r=0{,}5$, and $V=0{,}03$* we get $q_z = \frac{1}{2{,}5+6.0{,}5} - 0{,}03 = 15\%$.

(c) *Modification of the Formula for Other than the Standard Exploitation Periods*

We have thus far assumed that all enterprises have the same exploitation period, N_s. This is why the formulae demonstrated above do not apply to cases where the compared enterprises have different exploitation periods. Below we attempt to institute corrections for production and costs which allow the substitution of enterprises with exploitation periods n by equivalent enterprises of exploitation periods n_s.

Let us now consider all investments applied in the economy as of n years duration. We figure that this type of investment per

*The difference between actual wear and tear of 3% and amortization of 5% is explained by a rapid expansion of the fixed capital stock.

time unit is increased by 'a' annually and that its capital formation amounts to m. We further assume that m will not undergo any change in time. If the combined investment in the given year amounts to I, then it equalled $\frac{I}{1+a}$ in the previous year and in the year preceding $(i-1)$ it corresponded to $\frac{I}{(1+a)^{i-1}}$.

But since the value of an enterprise operating in the given year consists of the sum of investment values put to use in n years, it therefore amounts to:

$$M_n = \sum_{i=1}^{i=n} I. \frac{1}{(1+a)^{i-1}} = I \frac{\left[1-\left(\frac{1}{1+a}\right)^n\right] \cdot (1+a)}{a}$$

With capital formation m the production of such facilities amounts to:

$$F_n = \frac{M_n}{m} = I \frac{\left[1-\left(\frac{1}{1+a}\right)^n\right] \cdot (1+a)}{a.\ m}.$$

Let us now investigate the production results from an individual investment stream of the same capital formation but with standard durability of facilities, n_s. We now obtain

$$Fn_s = \frac{Mn_s}{m} = I \frac{\left[1-\left(\frac{1}{1+a}\right)^{n_s}\right] \cdot (1+a)}{a.\ m}.$$

Thus there is a change in the production volume of an economy with the same investment flow but of a different period of facility durability; and the production gains from building facilities with durabilities higher than n_s (i.e., with $n > n_s$) are expressed in the following relation:

$$\frac{Fn}{Fn_s} = \frac{1-\left(\frac{1}{1+a}\right)^n}{1-\left(\frac{1}{1+a}\right)^{n_s}} = Z_n > 1$$

The highest gains would have been obtained if $a=o$, i.e., if we were concerned with simple reproduction. Then $Z_n = \frac{n}{n_s}$, which means that over a longer durability period; with a given investment flow, production would increase in proportion to the

facilities' durability period. However, under conditions of expanded reproduction and the consequent yearly rise of the sum of investment outlays, the gains from the longer durability of a facility would be of lesser significance. This is so because appreciably lower investments in previous periods have a corresponding lessening effect upon the general production volume. Thus, if we assume $a=7\%$, which corresponds to the rate of increase in productive investments under Polish conditions, we get—with $n_s=20$ years—the following figures for coefficient Z_n (in %):

n	5	10	15	20	25	30	35	40	∞
Z_n	38.6	66.1	86.0	100	110	117	123	126	131

Hence, with a durability twice as high as the standard one, the gains from an increase in production amount to 26%, and with an infinite durability period to only 31%. This clearly indicates that a greater durability of facilities provides smaller advantages in an expanding economy than in one of simple reproduction.

Supposing that we substitute every enterprise of n years durability with another enterprise of the same investment outlay but with durability n_s and of a lower capital formation in the Z_n relation. Due to this substitution if the yearly production of an actual plant amounts to P, then that of an alternative plant will be PZ_n. It is easy to perceive that we get the same production and investment flows in both cases, the actual and alternative. As concerns investments, that results from the equality of outlays in the actual and substitute plants. As for production—according to the evidence presented above—the same investment flows for plants with n durability give a production flow Z_n times greater than for durability n_s with the same capital formation. In the case of the substitution with the enterprise durability n_s, the capital formation of its production was lowered in the Z_n relation so that here also the production flow is increased by Z_n times and it is therefore equal to the actual production flow.

Of course, not only a larger production flow but also higher costs correspond to a greater exploitation period of facilities. In considering this factor it is possible to apply the same reasoning as in the production sphere, with the introduction, however, of an

essential correction. This relates to the fact that with a given investment flow rising yearly by $a\%$, the production costs of newly commissioned facilities in a given year are higher not by $a\%$, but by less—by $c\%$—than the production costs of facilities commissioned the previous year. This follows from the successive cost reductions per output unit in the later commissioned facilities, resulting from technical progress. By the same reasoning as in relation to production, we obtain the result that with the same investment flow, facilities of a higher than standard durability require higher costs than those of standard durability—in the Y_n relation as defined in the formula below:

$$Y_n = \frac{Gn}{Gn_s} = \frac{1-\left(\frac{1}{1+c}\right)^n}{1-\left(\frac{1}{1+c}\right)^{n_s}}$$

G_n and G_{ns} represent the sum of costs for periods n and n_s. With $n_s = 20$ years, and $c = 3\%$, Y_n equals the following (in %):

n	5	10	15	20	25	30	35	40	∞
Y_n	31	57	80	100	117	132	145	155	227

By applying the same reasoning to costs as in the examination of production, it is possible to demonstrate that an alternative facility of standard durability n_s ought to have higher exploitation costs in the Y_n relation. Hence, if the costs of an actual plant of n years durability amounts to K, then the costs of an alternative plant of n_s years durability will amount to KY_n.

If we are therefore concerned with a plant of n years durability of production P and exploitation costs K, then we can substitute for it a plant of n_s years durability with the same investment expenditures as well as production PZ_n and costs KY_n. Consequently, the investment effectiveness formula for a plant with an exploitation period n, will assume the following shape:

$$E = \frac{I. \frac{I}{T}(1+q_z n_z)+KY_n}{P. Z_n}$$

This formula can also be represented thus:

$$E = \frac{I.\ \frac{1}{T}\ (1+q_z\, n_z)\ \ \frac{1}{Zn} + K\,\frac{Yn}{Zn}}{P}$$

Improvement of effectiveness in the case of a facility of higher than standard durability, elements of the formula which depend upon investment expenditures in the Z_n relation assume a declining expression. But an increase of exploitation costs in the proportion $\frac{Yn}{Zn}$ (which is greater than 1) worsens effectiveness. In this are expressed the losses incurred in fixing the long range outgoing exploitation costs of enterprises with greater durability periods, and consequently by reduced possibilities for technical progress. Which results will predominate depends on the relation of K to I $(1+q_z n_z)$. For example, taking into account the long period durability of hydro-power stations—whose exploitation costs are very low—appreciably improves their effectiveness.

It is necessary to point out that the tempo of the increase in production of new plants with an $a\%$ rate of production increase and a $c\%$ rate of rise in costs could be dissimilar for groups of enterprises with different durability periods; i.e., they could be different with different n. For lack of data in this sphere we assume the same $a\%$ and $c\%$ for groups of all durability periods and respectively 7% and 3% as above.

(d) Modification of the Formula for Variable Production Flow and Costs at the Time of Exploitation

Let us again consider the production flow of enterprises with n years duration and an $a\%$ yearly rate of increase in investments. For the capital values of working plants in the given year we obtained above the following formula:

$$Mn = \sum_{i=1}^{i=n} I.\ \frac{1}{(1+a)^{i-1}}$$

(I represents that year's investment).

We now reject the supposition held hitherto that production in the given enterprise is constant during the exploitation period. We divide the examined plants into groups in accordance with the

hape of the production curve. We assume that the investment low corresponding to them show the same annual rate of increase—$a\%$. The above formula of the capital values of plants in the given year hence remains in force for each of these investment flows. (I will now constitute the given year's investment, and M the capital value of plants operating in the given year with respect to the investment flows).

Let us calculate the production of plants in the given year. We designate by W_i the proportion between their production—in i year—and their capital values.

In the given year plants commissioned in the prior i-1 years, will have production characteristic for i year of its existence. Hence the production of plants commissioned i-1 years earlier will be expressed in the following formula:

$$I \frac{1}{(1+a)^{i-1} \cdot W_i}$$

Hence, the production flow of a given dispersion shape will appear as follows:

$$Fn = \sum_{=1}^{i=n} I \frac{1}{(1+a)^{i-1}} \cdot W;$$

Let us now imagine that we obtain production Fn of the same volume, with W constant and of the same investment flow. We then have

$$\sum_{i=1}^{i=n} I \frac{1}{(1+a)^{i-1}} w_i = \sum_{i=1}^{i=n} I \frac{1}{(1+a)^{i-1}} w_{st}$$

W_{st} may be called the equivalent of W continued. From the above equation it results that

$$W_s = \sum_{i=1}^{i=n} I \frac{1}{(1+a)^{i-1}} \cdot W_i \frac{\left[1-\left(\frac{1}{1+a}\right)^n\right] \cdot (1+a)}{a}$$

Hence, only one step remains to reduce a case of variable production in a given enterprise during the exploitation period to one of constant production. Let us substitute each plant of a given

dispersion of variable output during the exploitation period by a plant of the same investment outlay, but of constant production, whose level reaches to

$$P_{st} = \sum_{i=1}^{i=n} P_i \frac{1}{(1+a)^{i-1}} : \frac{\left[1-\left(\frac{1}{1+a}\right)^n\right](1+a)}{a}$$

It is easy to perceive that the alternative plants achieve the same output as the actual ones. The above equation thus gives us the volume of constant production as equivalent to variable production. The demonstrated formula rests upon the assumption that the investment flows corresponding to individual types of production dispersion have a constant share in the general flow of investments. Since this, however, corresponds only to approximate reality, the above formula cannot be regarded as entirely precise.

We can apply analogous reasoning to declining costs during the exploitation period. As the equivalent of variable costs we obtain the following:

$$K_{st} = \sum_{i=1}^{i=n} K_i \cdot \frac{1}{(1+c)^{i-1}} : \frac{\left[1+\left(\frac{1}{1+c}\right)^a\right](1+c)}{c}$$

We can now generalise the investment effectiveness formula for variable production and costs during the exploitation period by substituting P_{st} and K_{st} for P and K as in the formula below

$$E = \frac{I. \frac{I}{T}(1+q_z\ n_z)+K_{st} \cdot Y_n}{P_{st} \cdot Z_n} \qquad (4)$$

The above formula thus takes into account outlays frozen during construction, the durability of enterprises other than standard, as well as the variability of production and costs in time.

It is understood that the formulae presented above can be acknowledged only as an approximation of the economic actualities involved, not as definite solutions of concrete problems.

It is further necessary to indicate in conclusion, that in economic analyses it is not sufficient to compare different variants. For, while one of them may be relatively the best, still, all variants—including the best one—may actually be poor. There must exist a well-operating plant as an objective basis for comparison (while institut

ing essential improvements with the view of better sectional attainments in other enterprises). Technical-economic indices, labour and equipment-productivity indices as well as the intensity of their utilisation may serve as the elements of such a basis for comparison.

14

SOME PROBLEMS OF ECONOMIC DEVELOPMENT PLANNING

Jozef Pajetska

SOME UNDERSTAND BY PLANNING only the prediction of the course of economic development. This kind of planning is accessible to anyone who possesses a certain amount of economic knowledge, some statistical data, etc. The difference between our view and the above consists, first of all, in the fact that besides forecasting, planning to us means also the long-range projection of economic activity, which—on the basis of certain criteria—achieves an economic choice.

The following elements may be distinguished in economic plans:

(a) forecasting the nature of independent factors (climate, natural conditions, demographic factors);

(b) foreseeing the nature of factors which really lend themselves to regulation (the sphere of economic decision-making) and which possess their own laws of motion (e.g., consumption, technological progress, labour productivity);

(c) plan projection by means of a direct economic choice, which is achieved on the basis of economic accounting, or of social and political criteria, etc.

There is no basis whatever for the assertion that the range of choice in central plans is always the same, or that it is determined once and for all. There are on the other hand, grounds for the statement that in our economy the range should be considerable in this period.

The motivation for making an economic choice in plans embracing the economy as a whole, may be found primarily in the fact that such a choice must realise certain social objectives.

Let us leave for the present the question of the range of economic choice in central plans, merely with the assertion, that ours is a

conception of the *active planning of the whole economy*, i.e., of the kind of planning which not only forecasts what will occur but which projects what has to be done. If that is the case, then it is obvious that *our planning system must embrace the instruments for realising that which is projected*. There is indeed a very close connection between the plan and the instruments of its realisation. That connection is so close that it is difficult to consider separately either the range or character of the plan, or the instruments of its realisation. Hence, an explanation of our planning system must comprise not only the planning methods but also the question of the plan's realisation

In comparing the general economic planning systems of different countries, it is possible to reduce their differences to two principal points:

(a) the range of economic choice (economic decisions) arrived at in central planning;

(b) the means and instruments of economic management for assuring plan realisation.

In respect of the above problems, the planning system depends first of all on the economic conditions of the given countries, on the goals set for their economies as well as on their social-economic structures. Our planning system is determined by the socialist structure of our country.

Our socialist structure enables the application of *a range of central economic decisions, which*—in the given conditions—*are indispensable for the planned development of the entire economy*. In the concrete conditions of the first phase of industrialisation there appeared in Poland—as in other socialist countries—the necessity for a large degree of centralisation of economic decision-making. Their implementation was possible only under the conditions of the social ownership of the main means of production. In the course of further development a certain decentralisation of decision-making became appropriate. That decentralisation was effected on such a scale and by means of such methods as made it possible to assume the planned development of the entire economy and the subordination of the activity of individual economic units to the general interests of society.

The socialist structure also makes possible the application of adequately effective means for plan realisation. Direct adminis-

trative methods had a dominant influence in certain periods. At present economic instruments of plan management are being ever more broadly developed. A choice of means for plan realisation is being effected which takes under consideration, first of all, the tasks to be accomplished, the effectiveness of the various means used as well as the capacity for using them.

However, a socialist structure—which is based upon the social ownership of the main means of production—makes possible not only effective centralised planning. It also enables the shaping of the general planning system in which central planning is combined with the planning for enterprises and other economic units—together forming the general system of planning economic activity.

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Our planning system contains three principal types of general economic plans:

(1) long-range plans (perspective plans);
(2) medium-range plans (5-year plans);
(3) short-range plans (yearly).

Each of these types has different functions, different degrees of detail, and different processes of development, confirmation, etc.

The yearly and five-year plans have assumed principal importance in the planning system which has taken shape in our current practice. These can be supplemented by perspective plans only at a time when greater possibilities exist for forecasting economic development and when the planning apparatus possesses greater experience and know-how.

The yearly and five-year plans are formal documents confirmed by the highest state organs in accordance with constitutional enactments. They have an obligatory character, i.e., the appropriate economic organs have the responsibility for their fulfilment.

Perspective plans, however, are not obligatory. Their chief character is that of auxiliary elaborations which serve to aid the correct working out of the five-year plans.

The perspective plan is elaborated as a central plan for the national economy as a whole. Moreover, it is possible to draw up perspective plans for certain production branches, for regions and even for certain enterprises. However, there is no system of a general nature of perspective plans for all economic units.

The process of elaborating the yearly and five-year plans is such,

that from it stem the central plans for the whole economy as well as the plans for individual enterprises, administrative units, etc. It may be said that *the yearly and five-year plans are the universal forms of economic planning*. Consequently, their planning system operates not only on a central scale, but universally, in all economic units. The above assertion is a statement of the principle, whose correctness springs from our planning practice to date, and which we aim to realise. The system of linking planning in the enterprises with the central plan in our practice has been in the main effected through the yearly plans. But this brought with it a series of unfavourable results. An attempt was made in the recent period to change this system, and the principle has been introduced that the main form of linking planning in enterprises with the central economic plan should be the five-year plans.

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Passing over the three-year plan—as specific for the period of economic rehabilitation—it is first of all necessary to consider the six-year plan. This is especially essential for an estimate of our planning practice. *Its principal role as a planning instrument consists in the fact that it defined the developmental concepts of the first phase of Poland's industrialisation*. In this respect, it was an unusually dynamic plan, very far from what may be called a prognosis of the possible spontaneous development. It was a particularly bold project of reality-transforming economic activity which arrived at decisions regarding the most important problems of economic development.

What we termed above as the developmental concepts of the first industrialisation phase, mainly consisted of the following:

(a) defining the utilisation limits of the country's economic reserves, particularly of labour power and existing production capacity;

(b) determining the rate of economic growth and fixing the investment level;

(c) indicating the direction of development of production, and of the policies relating to the growth of the centres of economic activisation;

(d) charting the direction of social transformations.

It is not a simple matter to represent the long-range planning method applied in practice. The system of organising the work on the plan and application of the methods of its elaboration for

individual problems are very complex, very changeable over a period of time, and difficult to express in theoretical schemes. Moreover, explanation of the technical methods often obscures basic economic problems which are not resolved by patterns or formulae. In this respect, it appears that the best manner of introducing the planning method is an analysis of the basic problems of the economic choice concluded in the plans and their inclusion in the whole concept of economic development. True, that manner of representation cannot provide the exact picture of the method applied in practice; but it gives a better understanding of the meaning of planning and of its internal logic.

The following general scheme of the planning logic is accepted by certain theoretical works on the question:

(1) it is assumed that the aims of development are given, and that they are quantitatively determined;

(2) that the role of planning is to determine the manner of realising its targets by the projected economic activity in various spheres (e.g., in investment, production, employment).

A series of constructions and theoretical interpretations, which rest upon these schemes, are advanced both here and in the West. In particular, the first point is interpreted as a task assumed by decisions of a political character, while planning is concerned with the manner of realising these tasks. It is worth mentioning that the interpretation (and construction) of the so-called input-output model rests—among other things—upon the above planning logic.

But it seems to me that our planning does not rest on that logical scheme. It is at any rate difficult to discover a theoretical model which fully corresponds to reality. The scheme of planning logic toward which our practice tends appears as follows:

(1) assuming as given the reserves at the disposal of the economy, the growth possibility of certain spheres and other limitations;

(2) projecting the activity of individual spheres—doing it in such a manner as to obtain the maximum effect in the rise of social production (the national income);

(3) obtaining the maximum effect by the simultaneous realisation of certain structural levels or formations (pertaining to investments, consumption, etc.).

With the adoption of this general scheme, the chief problem of the six-year plan may be interpreted as a conception of utilising

the economic reserves of the country in order to attain the maximum growth of social production in the given years—1950-1955. By the economic reserves and potentialities of a country are meant, first of all, the production potential in the form of existing productive capacity, the potential of its growth (investment) and labour power.

Let us begin by first examining theoretically certain developmental problems of an economic character in order to clarify the solutions accepted by the six-year plan.

Social production depends upon two basic factors: constant capital (M) and employment (Z). This dependence has the character of cause and effect, and under given conditions may be expressed quantitatively as $P=f(M,Z)$. To indicate an increase in production the equation will be $\triangle P=f\ (I, \triangle Z)$; which means that the growth of production depends upon investment (I) and on the increase in employment ($\triangle Z$).

It may therefore be claimed that the estimate of an increase in production ensues on the basis of: (1) calculation of the magnitudes of I and $\triangle Z$—which are at the disposal of the economy in the given period—as well as (2) concrete knowledge of the interrelationship between I and $\triangle Z$ on the one hand, and the growth of production the other hand.

Let us assume that the stock of the available labour power (S) at the disposal of the economy is known, and hence that the upper limit of the rise in employment is also known. Let us further assume that the investment possibilities depend upon: (1) the economy's technical capacity to produce capital goods or export goods—from which investment means can be obtained; and (2) the investment level, or the degree to which the national income can bear the investment load. We designate technically-realisable investments by I'.

The second problem is to know the interrelationship between investment and the growth of employment and production.

A number of theoretical works have accepted the following formulation of the interrelationship between investment and the growth of the national income—$\triangle D=Ik$. This means that the increase of the national income in a certain period is equal to the volume of investments multiplied by k—the coefficient of investment effectiveness

If we know I' for any given period, then we can conclude that the possible rise in the national income will amount to $\triangle D = I'k$. We can likewise easily construct a formula showing the dependence of national income on employment. If we know the stock of available labour power S and the level of labour productivity, then we can calculate the national income increase which it is possible to attain from the rise in employment:

$$\triangle D = Sw$$

It is still necessary to combine the reasoning in both the above formulae. For, it is known that we cannot obtain an increase in the national income only on the basis of employment—without investment; nor on the basis of investment without employment. This poses basic theoretical problems and points to the great importance of utilising the economic reserves of a country.

If we accept the proposition that a production increase requires a certain capital formation, and we know at the same time the upper limit of investment possibilities (I'), then we define the possible ceiling for the rise of the national income. It is expressed as follows: $\triangle D^1 = I'k$.

If we accept, however, that the increase in production is achieved with a given labour productivity, then we can also accept that there is a certain ceiling on the growth of the national income—which cannot be exceeded because of the limited stock of labour power. We formulate this relation as $\triangle D^2 = Sw$.

There is no basis for claiming that the results of both calculations will be the same. As a rule, the situation in economically underdeveloped countries is such that $\triangle D^1 < \triangle D^2$. It is possible to state then, that investments comprise a narrow section of economic development while labour power is in excess. The above reasoning rested upon fixed investment possibilities from the viewpoint of the economy's technical capacity to invest. This does not undergo any fundamental change if in addition to the fixed investment possibilities is introduced the further limitation of the social burdens induced by investment.

Let us assume a certain investment level in the take-off period—$s = \frac{I}{D}$. We designate the investment level corresponding to the technical possibilities of investment (I') by s'. As a rule, a situation ensues, in which $s' > s$. In this situation we can accept the pro-

position—by recognising the investment level as a basic policy instrument of economic development—that the main problem of economic choice is to find the investment level within the limits of s sand s'.

The thesis that acceleration of economic development requires an increase of investments, i.e., the restriction of consumption, rests upon the above theoretical premises. For this is the indispensable and basic method for increasing the tempo of production.

In my opinion, the above theoretical postulates concerning developmental interdependencies, as well as the inferences flowing from them—particularly in regard to investment levels—are not yet accurate presentations of the planning method used in elaboration of the six-year plan.

To assume an interrelationship in which $\triangle D = Ik$ and $\triangle D^1 < \triangle D^2$ i.e., that investments are a narrow sector while labour power is in excess, means to regard investment effectiveness as independent of the volume of labour power applied, and the available labour power as not fully utilisable. Actually, the six-year plan was based in principle on the thesis of full employment. The problem involved may be put as follows: the consideration was not that a given investment range will attain a given increase of social production—with a certain given effectiveness coefficient. It was rather considered possible to attain more with a variable coefficient in relation to the volume of employed labour power. In this approach the available labour power reserve is regarded alongside investment as the second factor of production development, parallel with, and to a certain extent independent of them. This was one of the principal economic concepts of the six-year plan which enabled the maximization of the production growth. We term the employment policy based upon the above concept of production development factors, *the policy of maximum employment*. We will return below to certain aspects of this policy. It suffices to underline here that the possibilities of its achievement depended upon the following additional factors:

— existing technical possibilities for a large rise in employment, first of all in the sphere on unutilised production capacity;
— the cost of shifting labour power was not high (it was to a large extent possible to utilise existing transportation facilities in getting to work):

— the socialist system enabled the introduction of institutional conditions indispensable for the above-mentioned policy.

The dependence of economic growth upon a vast rise in employment provided our economy with the first mighty impulse for rapid development. Growth dependent upon a rise in employment, is, however, extensive in character and has limited possibilities. To secure lasting economic growth requires a constant factor not only of an extensive but also of intensive development. Investment is certainly such a factor. This constituted the second basic concept of Poland's first industrialisation phase, undertaken by the six-year plan

It is clear than an estimation of the possibilities of a given economy to obtain a lasting production growth on the basis of a high investment level, is a very difficult matter. It does not lend itself to theoretical calculation and requires practical research. The six-year plan adopted the thesis of a high investment level as the basis for the constant and rapid development of the national economy. Our planning continues to rely on that thesis. The fact that the premises accepted in that period for the six-year plan (and still more, the actual practice introduced in its realisation) proved much too high for the possibilities of our economy and had to be later considerably reduced—but that is another matter, which occasioned many negative consequences.

A further unusual and essential element of the developmental policy was the accepted principle that a high investment level should be attained not gradually, but in a relatively short period. It is possible to speak here of the unusually rapid leap achieved in the investment level. Comparing Poland's economic development with that of the capitalist countries—and the historical experiences they furnish—enables one to state with complete certainty that Poland's conception was as truly daring as it was momentous. There is perhaps no precedent of this nature outside the socialist countries. The apprehension aroused by an examination of this problem is first of all connected with the above cited theoretical scheme; namely, that an increase in production means a decline in consumption. But this problem appears in a different light if we introduce some corrections in our reasoning concerning the significance of a rise in employment to the growth of production. *A solution is possible* in this case, *in which a rise of investment is*

realised not on the basis of reducing consumption but of increasing employment.

In certain limited periods a rapid rise in the national income may follow an increase in employment. To achieve such a rise was the next problem of the six-year plan. The main alternatives here were whether to allocate the gains from the rise in the national income for consumption or also for accumulation (from the possibility of dividing the increment between them in different ways). In agreement with the decision reached in the six-year plan, the overwhelming portion of the increment was destined for investment.

Returning to the method of planning, based on the above considerations, it may be stated that the construction of a long range plan depends upon the *analysis of the possibilities to utilise the country's economic reserves with the aim of obtaining the maximum increase of social production over an extended period.*

The above may be put in a much more general form, namely, that the method is to seek the maximum results from the disposable means. We considered above that the result is an increase in production in measure with the rise of the national income. This, however, is not an incontestable approach. For it is known, that the goal of a socialist economy is the maximum satisfaction of the needs of society. If the maximization of the increase in consumption is effected in the long range by maximizing the growth of production, then most certainly that cannot be the case in short periods. A parallel rise in both production and consumption cannot be expected, particularly during the first industrialisation phase—when the chief task is to accelerate economic development. In this connection, the very planning characteristic specific for the six-year plan was recognition of the rise in production as the main maximization criterion. In further multi-year plans the problem was resolved somewhat differently. It was attempted to achieve the maximum development of social production along with an increase in consumption more or less parallel with the rise in the national income.

Maximization of the growth of social production (the national income) may be acknowledged as a general criterion for an economic choice in planning. Such basic problems as: the utilisation limits of the country's economic reserves, the magnitude of accumulation, the investment and production structures,

etc., are elaborated in multi-year planning on the basis of this criterion.

It may be said in general that the elaboration of the above problems in multi-year planning takes place in two main phases—in which different methods are applied. The first phase consists of an examination of the general growth interrelationships. Here macro-economic methods of analysis are applied which elaborate the aggregate magnitudes of such factors, as national income, investment, employment, consumption. The formulae presented above may serve as examples of the methods applied in establishing the interrelationship of investment and employment to a rise in the national income. The point of departure of the plan's hypothesis arises from the results of macro-economic analysis.

The planning work is more concrete in the second phase. Here are investigated the production structure, the investment subjects, etc. The methods applied in this phase are primarily demand analysis, drawing up the balance sheet, reckoning investment effectiveness, analysing the state of economic reserves, etc. This phase is particularly labour absorbing and requires the inclusion of many organisational units and often manyfold elaborations.

Maximization of the national income criterion constitutes the leading thought in applying the planning method in macro-economic analysis as in the examination of very detailed economic interconnections, in techno-economic solutions, etc. Of course, the methods applied do not always accurately correspond to this criterion, but its improved use tends in that direction.

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The second unusually essential sphere of planning economic development is that of consumption.

Let us consider briefly several questions concerning consumption in the six-year plan period—and in connection with that—the problem of covering the costs of industrialisation. This question is not separate from the ingredients of the first industrialisation phase conception, and represents an unusually important planning experience.

We mentioned above that the great increase of investments by the six-year plan depended mainly upon a rise in employment and not upon a decline in consumption.

In our economic system a decline in consumption—in relation

to investment—can only result from diminishing the quantity of consumption goods in favour of investment goods. This may be accomplished by: (a) exporting consumption goods or importing investment goods (or the raw materials indispensable for their production); (b) shifting plants from consumption to investment goods; (c) limiting the supply of materials to consumption goods enterprises and to agriculture, etc.

It may be stated in general that regardless of the evaluation of individual positions, on the whole, the above factors did not bring about the limitation of consumers' goods production. In fact, there was even a rise in their production. This resulted primarily from the fact that the policy of maximizing employment was also applied in consumers' goods enterprises.

It may hence be affirmed that the main developmental concept of the country's first industrialisation phase—which rested upon the full utilisation of the available labour power—made possible a great increase in investments without a fall in consumption.

It is, however, impossible to stop with the above estimation. Experience with the realisation of the six-year plan showed that under certain conditions the principal problem of living standards is not the increase in per capita consumption but the rise in income per employee.

This question was not placed properly or solved by the six-year plan. The experience in this matter acquired by our planning was rather one of mistakes.

The consequences of maximizing employment and directing its results chiefly to the increase of investments had to be a decline in income per employee, despite an increase in consumption per inhabitant. This is easy to explain.

It may be stated that a rise in per capita consumption will follow if the increase in the consumption fund is greater than the growth of population. With a policy of maximizing employment, however, the rise of employment will be greater than the population increase. Under these conditions, an increase in per capita consumption may be followed by a decline in real income per employee—if employment rises faster than the consumption fund.

The conclusion that *the policy of an appreciable increase in employment leads to a decline in real wages* stems from the assumption that an increase in investments results in a rise of employment—and a

consequent increase in per capita consumption—and not in a decline of consumption. Theoretically, the situation may be different when the consumption fund rises either faster than, or at the same tempo as employment. But that is possible only under the following conditions:

(a) if the results of employment growth are directed toward an increase in consumption;

(b) if there follows a rapid rise of labour productivity in the consumers' goods production branches.

The first of these factors was automatically excluded, since —as explained above—the increase of investments rested primarily upon the growth of employment. The second factor could not appear, since the extensive production increase (with the rise of employment) does not yield a corresponding increase in labour productivity.

The above changes in living standards could not but bring about still other very important consequences of a negative character. This mostly concerns the *very important process of a redistribution of the national income, resulting in important changes in the consumption levels of different population groups.*

Wage and price policies are the basic instruments of national income distribution in our economy. The prevailing policy of economic growth and the operating remuneration system required a rise in the nominal wages of production workers and a general increase in the wage fund—related to the increase of employment. However, the limited increase of consumers' goods brought about a rise in their prices (the policy of controlling inflation). Among other factors, this situation led to a very wide redistribution of the national income.

In general it may be affirmed that the prevailing concepts of the first industrialisation phase led to a regrouping of the population on the basis of their income levels. In this respect, there were very important changes as compared to the take-off period.

In the situation described income differentiation resulted from the following factors:

(a) the family status (the number of dependents and the number able to work);

(b) location of work places (in spheres of a rapid or gradual rise of nominal wages);

(c) residential areas (rural-town, industrialised areas, undeveloped areas, etc).

The temporary decline of real wages, and particularly the serious changes in real per capita income were induced by objective factors. They nevertheless placed heavy burdens on certain social groups and brought in their wake the well-known social-political reactions and dispositions which resulted in checking further economic development.

Returning now to the problem of the planning method, it is necessary to state—in relation to the above—that the essential mistake in the elaboration of the six-year plan consisted in overlooking the consequences of the prevailing growth policy on the distribution of the national income among the various social groups. This is a key problem for every society. But it is of particular importance for a socialist society, in which the question of complete equity in the distribution of the burdens of industrialisation must be regarded as important as the general growth of production and consumption.

It is possible to give the following general interpretation of the main elements of Poland's first industrialisation phase in summary form:

(1) the plan's target was the maximum growth of production during its duration;

(2) the maximum production growth was mainly attained by the utilisation of all the country's economic reserves—which under Polish conditions, primarily signified a policy of maximum employment;

(3) the results obtained were directed mainly towards a rise in investments, meant to assure a stable and rapid development of production in the future;

(4) the above assumptions signified that what may be called the industrialisation costs (or its social burdens) depended upon the following:

(a) the increased intensity of social labour, which must be emphatically acknowledged as socially justified. For, there is no other way to raise the economic level of a country which relies on its own resources for industrialisation, except by the increase of labour intensity;

(b) the reduction of income per worker through the general increase of per capita consumption;

(c) the pronounced inequality in consumption levels—and in that connection—the particularly heavy burdens of certain social groups.

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A very important element of the six-year plan's growth concept was its definition of the direction of economic development.

Consideration of the question of the ultimate distribution of the social product, and determination of the adjustment of the production structure to that end, are the principal planning methods applied in socialist countries for the solution of the problem discussed above.

It is obvious that the actual production structure and that of national income distribution must harmonise. Here foreign trade, which adjusts the above, must also be considered. By taking the above into account we can formulate the conditions for a harmonious plan as follows:

$$I+K=P_i+P_k+S$$
$$I=P_i+S_i$$
$$K=P_k+S_k$$

(I designates investment; K consumption; P_i investment goods production; P_k consumption goods production; S the foreign trade balance).

The thesis of a rapid leap in outlays and a high investment level, as conditions for a lasting and rapid rate of economic development, adopted in planning, posed the following basic problem: how may such a large investment programme be secured? Only two possibilities existed for solving this problem:

(1) a nationwide increase of investment goods production;

(2) importing investment goods.

The fundamental long range solution adopted by the six-year plan was to create our own, domestic, technical bases for investment—or in other words—to rely upon our domestic heavy industry for investment. This of course was not the only possible solution and the problem evoked many controversies among us.

Let us begin consideration of this problem by pointing out that the basic question is the scale of demand for investment goods. If the thesis of investing a very important part of the national income in the socialist economy is correct, then it is to be expected that *a vast internal market for investment goods will arise.*

Theoretically there exists of course the possibility of the large-scale import of investment goods. That possibility, however, did not exist for our country. For, export possibilities determine the limits for imports (if we omit the problem of foreign credits). This question is in turn determined by two main factors:

(1) the technical-organisational possibilities of increasing production or export;

(2) the profitability of export production as compared to the alternative of producing imported goods internally.

An analysis of these two factors is the basic method of long range foreign trade planning.

If we hold that the economic profitability of exports is known, then the technical capability to increase export production (by assuming sales possibilities of world markets) indicates the extent of the possible rise of exports—and on that basis also of imports.

Poland's natural and economic conditions at the time the industrialisation programme was coming into realisation, did not indicate any possibility of such a rise in exports as to enable the long range resort to imports on the scale required by the growth of investments. Outside of coal, the increase of exports could only have followed gradually after mastering domestic production. Coal constituted the main exception in this respect. It may be stated with full assurance that the export of coal provided us with the great historical opportunity, by creating favourable conditions for our industrialisation. These were, however, temporary opportunities. A worsening of the world coal crisis and the narrowing of Poland's export possibilities (due to the large increase in our domestic consumption and difficulties in increasing coal production) developed almost parallel with the completion of the six-year plan. In that period the import of investment goods depended upon the export of coal. But these investment goods were of the type which created domestic technical bases for further investments. Such imports were certainly as indispensable for Poland as they are for every country desiring to accelerate industrialisation while in a technically underdeveloped state.

It is, therefore, possible to assert that the need for the expansion of heavy industry stemmed in Poland from two basic premises:

(1) the idea of a high investment level;

(2) the lack of possibilities for the expansion of export production able to cover high import investments over the long range.

It is easy to perceive that the above represents balance-sheet reasoning which relies on the mode of thinking (and planning methods) as expressed in the formulae of the plan's internal harmony. With limited export possibilities, the required investment increase had to be realised by raising our own production of investment goods, and hence by expanding our heavy industry. On the basis of limited export possibilities, imports did not present any realistic alternative to the expansion of heavy industry, i.e., it was impossible to substitute imports for heavy industry. The only alternative would have been to reduce investments and to consequently check the tempo of economic development. Practice in the realisation of the six-year plan showed that a certain reduction of investments and of the rate of production growth was justified. But this constituted only a correction of the scale. It did not signify any retreat either from the concept of a high investment level, or from that of creating domestic technical bases of investment, i.e., from the idea of possessing a highly developed heavy industry of our own.

The above balance-sheet conception was also motivated by consideration of the quetsion of foreign trade profitability. This may be affirmed with complete confidence today when the economic calculation of our exports and imports is introduced on a large scale, and when we have a fairly good notion of the profitability of our foreign trade. The forced maximization of coal exports during the six-year plan period was without doubt the most profitable solution of the foreign trade problem under the prevailing conditions. Utilisation of the possibilities thus afforded to substitute our domestically produced machines and equipment for the import of investment goods (upon which depended the policy of expanding our heavy industry) was and is today acknowledged as having been very profitable.

Our current export policy rests to a very large extent upon the expansion of engineering industry exports. We expect to follow this course in the future to an even greater extent. If we did not possess a developed heavy industry, built during the six-year plan, then we certainly could not project the future rate of development provided in our plans.

The general correctness of our developmental concepts does not signify, however, that we did not comit a series of important mistakes in the solution of some concrete problems. These resulted particularly from our failure to apply economic accounting in our planning, other than that of securing a proper balance.

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The problem of the direction of economic development does not apply only to a decision regarding the role of heavy industry in the economy and—in this connection—to the determination of its rate of growth. The internal structure of heavy industry and the changes it undergoes constitute unusually important problems. It is only necessary to consider in this regard certain developmental premises of the six-year plan, which we will call here the *concept of economic development phases*. Methods which may be defined as *balancing production over a period of time* are applied in our planning to solve this problem. Since the problem is fairly complicated, we represent it below in a much simplified manner, as follows:

I. Fuel and power . . . . . (1)

II. Instruments of production
- (a) for producing production instruments (machine tools) . . . (2)
- (b) for producing raw materials and equipment for the investment goods sector . . . . . (3)
- (c) for producing raw materials and finished goods for the consumption goods sector . . . . . (5)

III. Raw materials and equipment
- (a) for the investment goods sector . . . . . (4)
- (b) for producing consumption goods . . . . . (6)

IV. Consumption goods . . . . . (7)

The table on next page illustrates technological relations in the national economy as a whole. But it provides only a static picture of these relationships. But with development over a period of time the established relations become very complicated. For, elements of change depending upon the technological character of production enter into the picture. Considering the development of production over a period of time, it may be possible to say in reference to the table next—with much simplification—that the development

The Balance Sheet of Social Production

(abstract example)

	1	2	3	4	5	6	7	8
1	P_{11}	P_{12}	P_{13}	P_{14}	P_{15}	P_{16}	P_{17}	
2		P_{22}	P_{23}		P_{25}			
3	P_{31}			P_{34}				
4		P_{42}	P_{43}		P_{45}			
5						P_{56}	P_{57}	
6							P_{67}	
7								P_{78}

followed more or less the order marked out diagonally (from the upper left corner to the lower right corner). We would thus have the following order of development of the national economy: the development of power and of raw materials for investment production; of machine tool production; of machines for producing raw materials; of raw materials for consumption and machines for consumers' goods production; and finally, the development of production of consumers' finished goods. The following change in the production structure would take place with the above progression of development of the national economy: the first stage would be characterised primarily by a great expansion of mining and metallurgy, then of the machine building industry, of basic chemical raw materials, etc. The rapid expansion of consumers' goods production would follow in the second stage.

On the basis of the above much simplified premises, it is possible to affirm that a similar model was applied in the elaboration of the six-year plan, and that the plan adopted the concept of industrialisation phases. By the nature of that concept, the role

of the first phase, namely, the concentration of efforts for the expansion of metallurgy, fuel and power, of machine building and basic chemicals had to devolve upon the six-year plan—just as with the first stage. It is necessary to underline that this is not—and could not be—the lasting progression of development, but only that of the first industrialisation phase.

It seems that the above-described developmental concept adopted by the six-year plan has met with most reservations. That may be because it is not supported by the same strong economic reasoning as the general line of developing heavy industry. Its principal economic consequences were quite far removed in time from the effects of the country's great investment exertions. For, it followed from this concept that investment could effect a rise in consumers' goods production—and hence in consumption—only after an extended expansion cycle of the whole economy (the first phase). Actually, that cycle lasted longer than was planned in the six-year plan elaboration.

An alternative solution of the first industrialisation phase tasks could have been a decrease in the rate of development, or a different foreign trade conception. Strictly speaking, the problem might have been solved by closer economic cooperation with the socialist countries. The difficulty, however, lay in the fact that the other socialist countries were in a similar phase of development.

It is clear that the experience gained by our planning in the above respect is of great importance. The method balancing the development of production over a period of time has not lost its importance and must be further technically improved. It must, however, be supplemented by the international coordination of economic development plans, and by a broader concern of each country with the method of planning the profitability accounting of an international division of labour. This is one of the most essential questions in our country today and we have been making appreciable progress in that sphere.

★ ★ ★ ★

As indicated above, our planning system comprises different types of general-economic plans, of which the yearly and five-year plans are of basic importance. Fulfilling different functions, these constitute a closely-related, mutually supplementary group of

plans. On the basis of practice up to now their functions may be defined in the following way:

Chief Funcions of the Multi-Year Plans (Five Years)

(1) determining the rate and direction of the country's economic development (which we discussed with the six-year plan as our example);

(2) defining the chief investment objectives.

In the course of multi-year planning there is a tendency for the ever more detailed determination of the direction of development. Such detailed and very precise elaboration plays a great role and indicates progress in planning. It is also indispensable for connecting general-economic planning with planning in the enterprises. The high accuracy of multiple year planning does not mean, however, that the five-year plans lose their main character as direction plans, or that they do not require improvement in the shape of yearly planning.

Chief Functions of the Yearly Plans

(1) determination of the range and manner of realisation of the tasks of the five-year plans (their adaptation to existing conditions, to changes in development policy, very accurate confirmation of certain tasks);

(2) fixing of the short-range tasks of economic policy in the spheres of improving economic equilibrium, distribution of the national income (in relation to wages, prices, debts, etc);

(3) determination of the instruments for plan realisation.

The last point is the most interesting specific characteristic of yearly planning during the first industrialisation phase.

In view of the line of economic policy adopted in our plans it cannot be doubted that their realisation was impossible without strong state intervention in the economic activity of the enterprises. Moreover, it is particularly important that state economic direction took a *highly centralised* form of decision-making and mainly utilised *administrative* forms of plan realisation. These traits of yearly planning merit particular attention for they show the farreaching connection between a country's economic conditions, its developmental targets and methods of economic management.

The causes of centralisation were of course diverse. It is possible though to point particularly to the fact that one of the factors which has had a very important influence on the centralisation of management has been the weakness of personnel. Here, however, I wish to deal primarily with the economic conditions affecting centralisation. *In my opinion, the policy of maximum employment exerted the principal influence upon the character of yearly planning.*

The policy of maximum employment may undoubtedly be explained as the consequence of economic considerations having the maximization of the national income as their goal. This type of consideration, and the economic accounting corresponding to it, are, however, entirely different than the conventional form of economic calculation of enterprises depending upon market prices. It must consequently be asserted that under certain conditions, *economic accounting, which rests upon the criterion of national income maximization, may be achieved only centrally; while the enterprises do not possess the basis for introducing rational economic accounting.* The divergence between economic accounting on the basis of available enterprise premises and central accounting may be of different degrees. Sometimes it may be almost general, in which case it is far removed from central planning. Such a situation appeared in Poland during the first period of the six-year plan. It may now be stated with complete certainty that perhaps not a single enterprise would be able to adopt a policy of maximum employment on the basis of the normal profitability criterion; whereas on a national economic scale this policy has been the principal factor of the country's economic expansion. However, the basis for achieving a correct economic accounting (the so-called corresponding national income maximization) was lost in the course of the realisation of the policy of maximum employment and of the full utilisation of the technical productive potential. In different economic circumstances the divergence between central economic accounting and that of enterprises could be reduced. Such was the actual state of affairs by the end of the six-year plan and in ensuing years. On this basis there grew the conviction regarding the need for restoring economic accounting in the enterprises, for applying the market mechanism, and for a certain degree of planning decentralisation.

Still another question may be posed on the basis of the above

reasoning. The necessity of farreaching centralisation (particularly in central economic accounting) still does not mean that the plan must be realised by administrative means. A system is conceivable in which planning is centralised, but in which indirect, economic instruments (which utilise the incentive of material self interest) operate in the enterprises. The following observations may be made in respect of this problem:

(1) Accounting must at all events be made centrally. If the central accounting must be very detailed, then the system of economic instruments would have to be unusually complicated.

(2) It is not possible to expect that management by means of economic instruments will enable enterprises to adjust themselves rapidly to changing circumstances in an economic situation where the relation between demand and production fluctuate sharply—and in which there generally occur radical changes in the economic structure.

(3) It is not a simple task to direct enterprises by economic means. It particularly requires a proper knowledge of these instruments. Extended observation, special studies and a high level of the employees economic training are necessary for the above.

It seems to me that the above considerations determined the character of the administrative means of economic direction. The second of the above observations may be termed the *consideration of efficacy*, and the first and third—*considerations of technical facility*.

As shown above the centralisation of yearly planning had deep economic motivations. These persisted in the economic situation in the country, which was characterised by the under-utilisation of the principal factor of productive power, namely—labour power, and by the fact that planning rested upon the criterion of maximizing the national income growth. However, the country's economic situation underwent a change. As a result, the methods of planning and economic administration also had to be changed.

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